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ABSTRACT

This report presents data on the enrollment of foreign students at colleges and universities in the United States, with special emphasis on the effects of this enrollment on American graduate science and engineering (S&E) programs. Information based on census data and survey results is presented in 30 charts with accompanying text. Results indicate that the number of foreign students enrolled in U.S. institutions of higher education is growing rapidly, approaching 450,000 students annually. The 107,000 non-U.S. citizens enrolled in graduate programs in the science, engineering, and health fields in 1991 represent 31 percent of all enrollments in those fields, up from 28 percent in 1983. Although nonresident aliens accounted for only 3 percent of all S&E bachelor's degrees awarded in the United States in 1991, they accounted for 32 percent of all S&E doctorates awarded. Nonresident aliens accounted for 51 percent of all engineering doctorates awarded in 1991. The bulk of the report consists of two appendixes, which present 27 detailed statistical tables on individual institutions, fields, and nations, along with technical notes on the sources. (MDM)

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Foreign Participation in U. S. Academic Science and Engineering: 1991

Principal Author: J. G. Huckenpöhler

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Special Report

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Foreword

Increasing concern has been expressed in recent years over the growing proportion of foreign nationals in the U.S. scientific and engineering work force. The issue of the extent of foreign participation at all levels of science and engineering, from student enrollment to professional employment, may be reflected in questions about effects on U.S. national security, international competitiveness, and opportunity for employment of U.S. citizens. Statistics related to these topics from various sources were published by the National Science Foundation in 1986 under the title, *Foreign Citizens in U.S. Science and Engineering: History, Status, and Outlook*. This publication presents more recent comprehensive statistics; the primary focus of the text, however, is on changes that have occurred since the previous edition was published.

Kenneth M. Brown, Director
Division of Science Resources Studies
National Science Foundation

February 1993

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This report was prepared by J. G. Huckenpöhler, Science Resources Analyst in the Science and Engineering Education and Human Resources Program (EDU), Division of Science Resources Studies, under the supervision of Mary A. Golladay, Program Director. Supervision, review, and overall guidance were provided by Kenneth M. Brown, Director, Division of Science Resources Studies. Susan Hill of EDU and Lori Thurgood of the National Academy of Sciences contributed data for chapter 3; and additional data for chapter 4 were provided by Patricia White of EDU, and Carolyn F. Shettle of the National Science Foundation's Science and Engineering Personnel Program.

Special thanks are in order to the Institute of International Education for permitting the use of data on overall foreign student enrollment, to the National Center for Education Statistics of the Department of Education for data on fall enrollment and completions from their IPEDS (Integrated Postsecondary Education Data System) surveys, and to the American Association of Engineering Societies for data on engineering enrollment.

In addition, valuable comments and suggestions were provided by the following outside reviewers: Marianthi Zikopoulos of the Institute of International Education, Jeanne-Marie Duval of the National Association for Foreign Student Affairs, and Jeanne E. Griffith, Mary Frase, Irene Baden-Harworth, and Gayle Rogers of the National Center for Education Statistics.

Page

Table of Contents

Foreword iii
Acknowledgments v
General Notes 1
Introduction 3
Summary of Major Changes since 1986 5

Chapter

1. Foreign Students in U.S. Institutions of Higher Education 7
2. Non-U.S. Citizens in Graduate Science and Engineering Programs 15
3. Non-U.S. Citizen Recipients of U.S. Science and Engineering Degrees 23
4. Employment of Non-U.S. Citizens in U.S. Institutions of Higher Education 31

Appendix

A. Detailed Statistical Tables 37
B. Technical Notes 119

General Notes

Data presented in this report are derived from several sources, each of which is described in the Technical Notes. In the interest of comparability of statistical presentation, the following definitional distinctions should be noted:

1. The term "non-U.S. citizens" is used to designate persons with citizenship in a country other than the United States at the time of the data collection, as well as stateless persons. This group includes those persons on permanent (immigrant) visas as well as those on temporary (student or other) visas; where possible, data for these two groups are presented separately. The terms "foreign citizens" and "foreign students" are used in statistics from the Institute of International Education and the National Center for Education Statistics to designate only those individuals who are in the United States on temporary visas; immigrants who have achieved permanent resident status (the "green card") are included in the totals shown for U.S. citizens in those surveys.

2. The major statistical series presented here differ in their treatment of data for the health fields. Data from the NSF Survey of Earned Doctorates **exclude** totals for the health fields. The NSF Survey of Graduate Students and Postdoctorates in Science and Engineering **includes** individuals in the health fields working toward a Ph.D. or the equivalent, and postdoctoral appointees whose appointments are primarily research oriented, but **excludes** those students working toward the M.D. or other first-professional degrees in the health fields, and those postdoctoral appointees whose appointments are primarily oriented toward patient care (interns and residents).

3. "Doctorate-granting institutions" include all institutions granting a doctorate in one or more fields of science and/or engineering; these institutions also grant the vast majority of the master's degrees awarded. The term "master's-granting institutions" refers only to those institutions for which the master's is the **highest** science or engineering degree awarded.

4. The surveys upon which the data in this report are based use varying designations for the academic years reported. For purposes of comparability, academic years are listed in all tables according to the calendar year in which they **ended.** Thus, data from the fall 1990 Survey of Graduate Students and Postdoctorates in Science and Engineering, which covered enrollments for the academic year 1990/91, are shown as **1991**; data from the Survey of Earned Doctorates showing degrees awarded during the year ending in June 1991 are reported as 1991 awards.

5. The following abbreviations and acronyms are used throughout this report:

GSESP -	Survey of Graduate Students and Postdoctorates in Science and Engineering
IIE -	Institute of International Education
NCES -	National Center for Education Statistics
NIH -	National Institutes of Health
NRC -	National Research Council
NSF -	National Science Foundation
S&E -	Science and Engineering
SRS -	Division of Science Resources Studies

Charts and text in the body of this report present data primarily on major changes over the most recent decade. Longer-term trend data, where available, are included in the appendix tables for the benefit of those wishing to examine the complete survey series.

Introduction

The internationalization of the science and engineering (S&E) marketplace is not a new phenomenon. Scholars from all parts of the classical world congregated in Periclean Athens; mediaeval scholars traveled to the great universities of the Islamic world, bringing back scientific advances that laid the groundwork for the Renaissance. Prior to World War II, European universities provided the training for generations of U.S. scientists. The years following the end of that war represented a turning point in the relationship between the United States and Europe on the scientific as well as the economic level. For the first time, more Europeans were studying at American universities than Americans were studying in Europe.

The growth in the number of foreign citizens educated in the United States is shown dramatically by the figures published by the Institute of International Education in its annual series of reports, *Open Doors,* which are reproduced in chapter 1 of this report. This increase was accompanied by a shift in the countries sending the largest number of students to the United States.

Federal policy toward foreign students in general has been defined by five pieces of legislation: The United States Information and Exchange Act of 1948, the purpose of which was to increase "mutual understanding between the people of the United States and those of other countries"; the Mutual Education and Cultural Exchanges Act of 1961, which provided for the Fulbright Scholarship program; the Foreign Assistance Act of 1961, which established training programs under the aegis of the Agency for International Development; the International Education Act of 1966; and the Immigration Act of 1989. Most of these laws were passed in a cold-war context and were aimed at preventing the spread of communism. With the world now entering a new phase of history, this underlying rationale is subject to significant modification. In recent years, for example, students admitted under temporary student visas, as well as their dependents, have been subject to significant restrictions on outside employment; such students are usually limited to working for their institutions.

This report presents data on changes in the distribution of foreign students and the effect of these changes on American graduate scientific and engineering programs, and concludes with data on foreign members of the American scientific and engineering community. Although the primary emphasis in the text is on significant changes since the previous edition of this report was published in 1986, data for earlier years are included in the appendix tables for the benefit of those wishing to examine trends over a longer time period. Additional data tables, including individual institution listings, detailed field data, and discontinued time series for which no additional years of data are available since the previous publication, are available in a pamphlet entitled *Foreign Participation in U.S. Science and Engineering: Supplementary Data Tables.* Copies may be ordered without charge from J. G. Huckenpöhler, Science and Engineering Education and Human Resources Program, Division of Science Resources Studies, National Science Foundation, 1800 G Street , N.W., Room L-609, Washington, D.C. 20550.

Summary of Major Changes since the Previous Edition

Chapter 1. Foreign Students in U.S. Institutions of Higher Education

- After a temporary slowdown in the mid-eighties, the number of foreign students enrolled in U.S. institutions of higher education resumed the rapid growth that had characterized the earlier part of the decade.

- The People's Republic of China, which sent no students at all to the United States until the seventies, was the source of the largest number of foreign students, with nearly 40,000 students. Nationalist China, despite an increase in the total number of students in U.S. universities to almost 34,000, fell from first place in 1990 to third, after Japan.

Chapter 2. Non-U.S. Citizens in Graduate Science and Engineering Programs

- The 107,000 non-U.S. citizens enrolled in graduate programs in the science, engineering, and health fields in all U.S. universities and colleges in 1991 represented 31 percent of all graduate students in those fields, up from 28 percent in 1983. Of all non-U.S. citizens, 94 percent were enrolled in doctorate-granting institutions, and 84 percent were enrolled full time.

- Non-U.S. citizens enrolled full time accounted for 28 percent of all graduate science students, up from 17 percent in 1982; for 47 percent of all graduate engineering students, compared with 42 percent a decade earlier; and for 13 percent of those in the health fields, up from 8 percent in 1982.

Chapter 3. Non-U.S. citizen recipients of U.S. Science and Engineering Degrees

- Nonresident aliens earned 3 percent of all S&E baccalaureates and 17 percent of all master's degrees awarded by U.S. universities and colleges in 1991 in NSF-surveyed fields, but accounted for 32 percent of all S&E doctorates awarded in that year. This total includes 27 percent of all science doctorates and 51 percent of all engineering doctorates.

- Non-U.S. citizens received the largest proportion of the total doctorates awarded in the mathematical sciences, 55 percent of the total, and in the computer and information sciences, 51 percent. All science fields, however, have experienced significant increases in the proportion of all doctorates awarded to non-U.S. citizens, with most of the increase in the proportion awarded to foreign students on temporary visas.

- The proportion of all doctorates earned by non-U.S. citizens was much higher in most engineering fields than in the sciences, with 71 percent of all civil engineering doctorates and 65 percent of those in mechanical engineering awarded to non-U.S. citizens. Only in chemical engineering did the proportion of all doctorates awarded to non-U.S. citizens decline over the past decade, from 55 percent to 47 percent of the total.

Chapter 4. Employment of Non-U.S. Citizens in U.S. Institutions of Higher Education

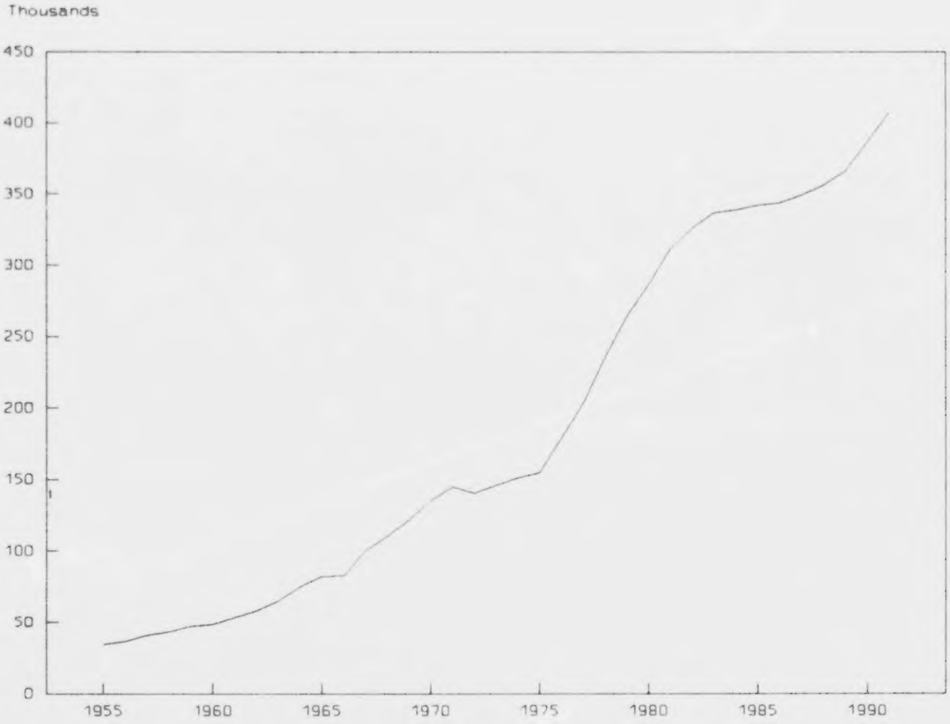
- Non-U.S. citizens accounted for almost one-half of the postdoctoral appointees in the science, engineering, and health fields at doctorate-granting institutions in 1991, up from one-third a decade earlier. In engineering, 69 percent of the total were non-U.S. citizens.

- About 6 percent of the scientists and engineers employed in the United States in 1989 were non-U.S. citizens. The majority of the non-U.S. citizens--81 percent--were in this country on permanent visas.

Chapter 1. Foreign Students in U.S. Institutions of Higher Education

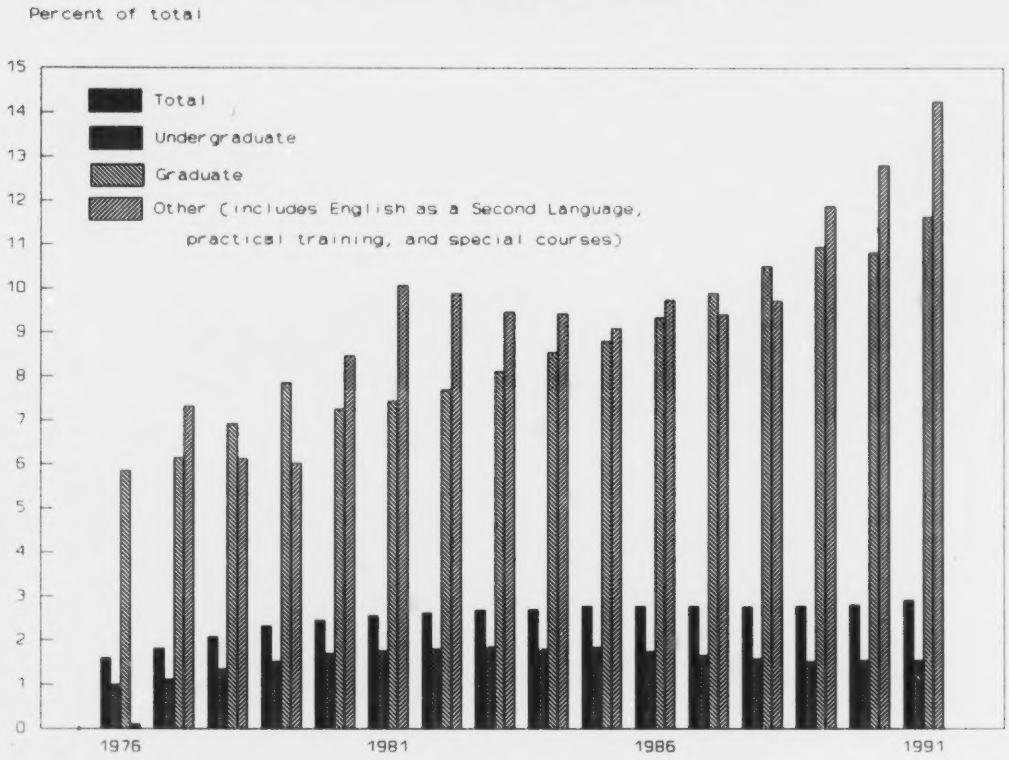
- After a temporary slowdown in the mid-eighties, the number of foreign students enrolled in U.S. institutions of higher education resumed the rapid growth that had characterized the earlier part of the decade. At less than 4 percent per year, however, the increases were still significantly below those of the late seventies, when average annual increases fluctuated in the 10- to 20-percent range.

Chart 1. Number of foreign students enrolled in U.S. institutions of higher education



SOURCE: Table A-1, Institute of International Education, *Open Doors*

Chart 2. Foreign students as a percent of total enrollment in U.S. institutions of higher education, by level



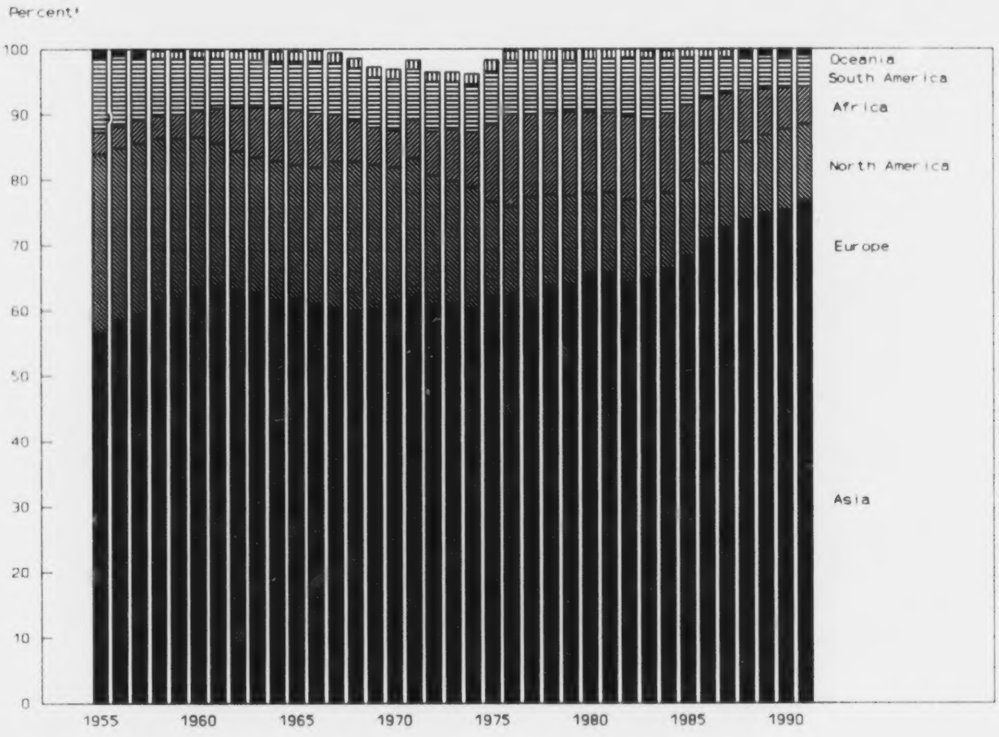
NOTE: The definition of "other was modified in 1977; the data for 1976 are therefore not strictly comparable with later years.

SOURCE: Table A-2, Department of Education/NCES and Institute of International Education, *Open Doors*

- The rapid growth in the number of foreign students enrolled has resulted in a significant increase in the foreign proportion of the total enrollment at all levels of study. In 1991, 1.5 percent of all undergraduate students were foreign, up from 1 percent in 1976. During the same period, the foreign proportion of all graduate students rose from 6 percent to nearly 12 percent, and "other" (including first-professional and those enrolled in special programs) jumped from almost none to over 14 percent.

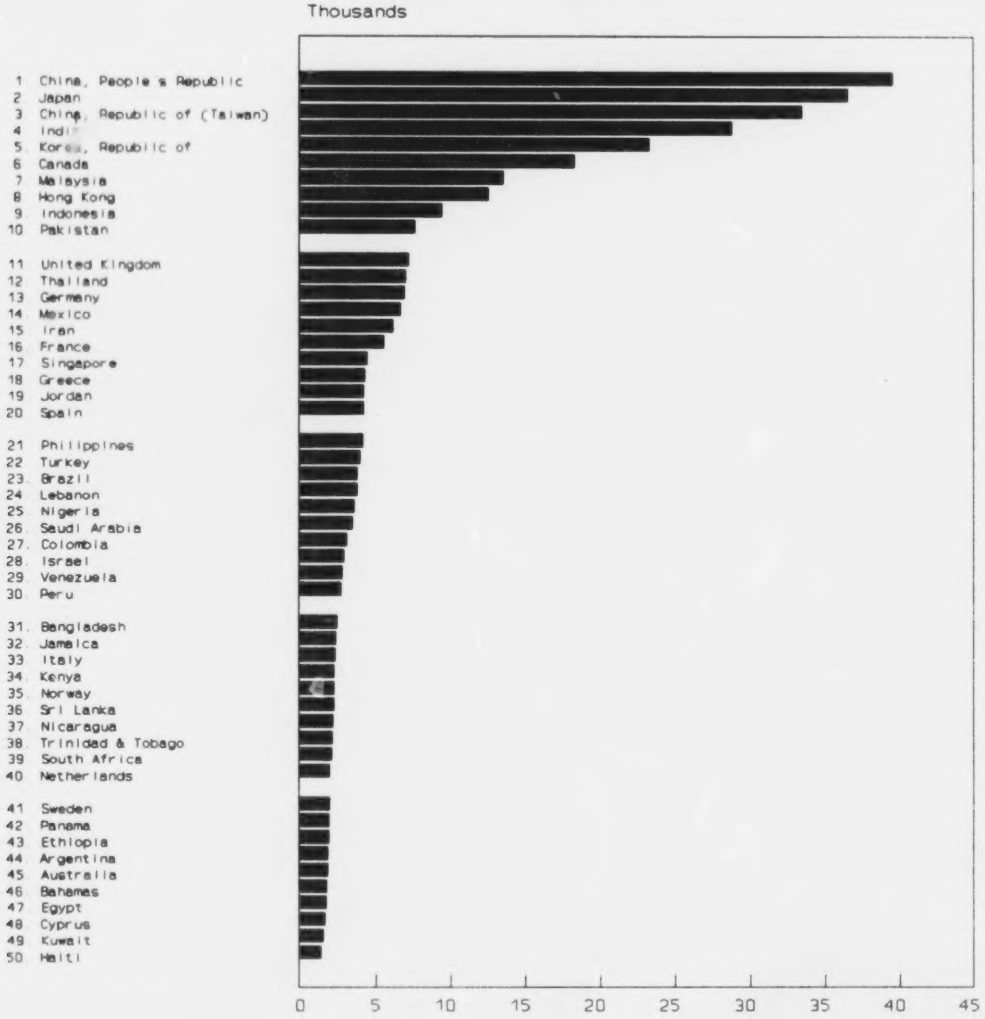
- Nearly two-thirds of all foreign students in U.S. academic institutions in 1991 were from Asia; in 1955, when the Institute of International Education's *Open Doors* series began, students from Asia accounted for only two-fifths of the total. During the same period, the proportion from Europe declined from 15 percent to under 8 percent as European universities rebuilt, and then in the eighties began to rise again, to 12 percent. The proportions from South America and the remainder of North America declined--though the absolute numbers continued to grow--while both the proportion and the absolute number from Africa rose steadily until the early eighties and then declined.

Chart 3. Percent distribution of foreign students in U.S. institutions of higher education, by home continent



SOURCE: Table A-3, Institute of International Education, *Open Doors*

Chart 4. Foreign students from 50 leading countries in U.S. institutions of higher education

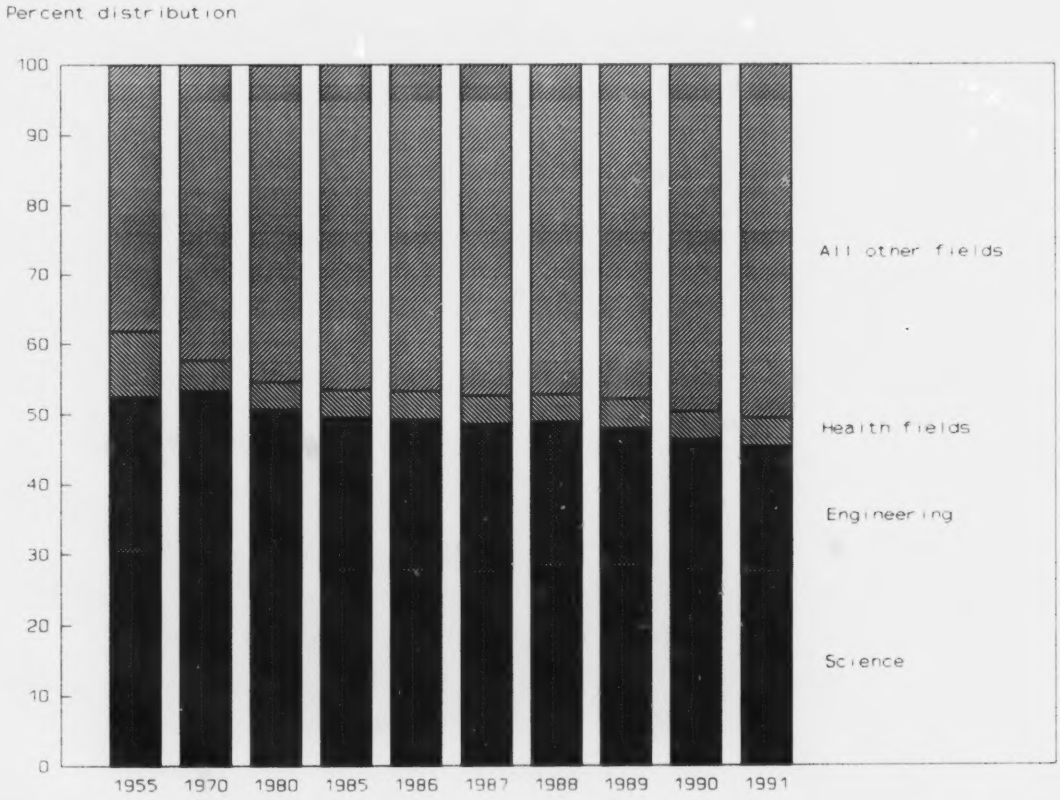


SOURCE: Table A-4, Institute of International Education, *Open Doors*

- Seven of the ten leading countries in terms of the number of their citizens enrolled in U.S. academic institution in 1991 were located in the "Pacific rim" area; a decade ago the leading countries were OPEC nations, primarily located in the Near and Middle East. Iran, which in 1979 sent the largest number of students to the United States, had fallen by 1991 to 15th place; while the People's Republic of China, which sent no students at all to the United States until the seventies, ranked first with nearly 40,000 students. Nationalist China ranked third with almost 34,000, down from first in 1990.

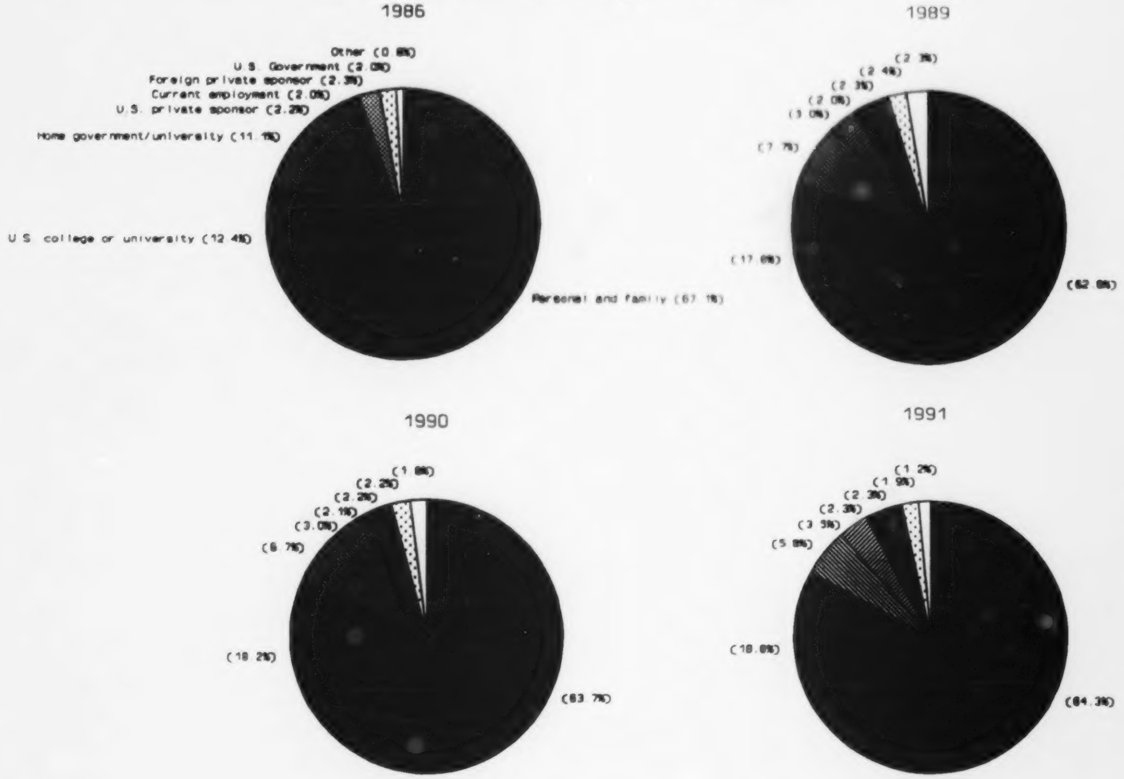
- Slightly over one-fourth of the foreign students enrolled in U.S. academic institutions at all levels in 1991 were in the science fields, a proportion that has remained stable since the mid-eighties. Engineering students accounted for about one-fifth to one-sixth of the total in each year, while those in the health fields made up about 4 percent. Over one-half of all foreign students were enrolled in non-S&E areas, up from about three-eighths in 1955.

Chart 5. Distribution of foreign students in U.S. institutions of higher education, by major area of study



SOURCE: Table A-5, Institute of International Education, *Open Doors*

Chart 6. Sources of primary support for foreign students in U.S. institutions of higher education



SOURCE: Table A-6, Institute of International Education, *Open Doors*

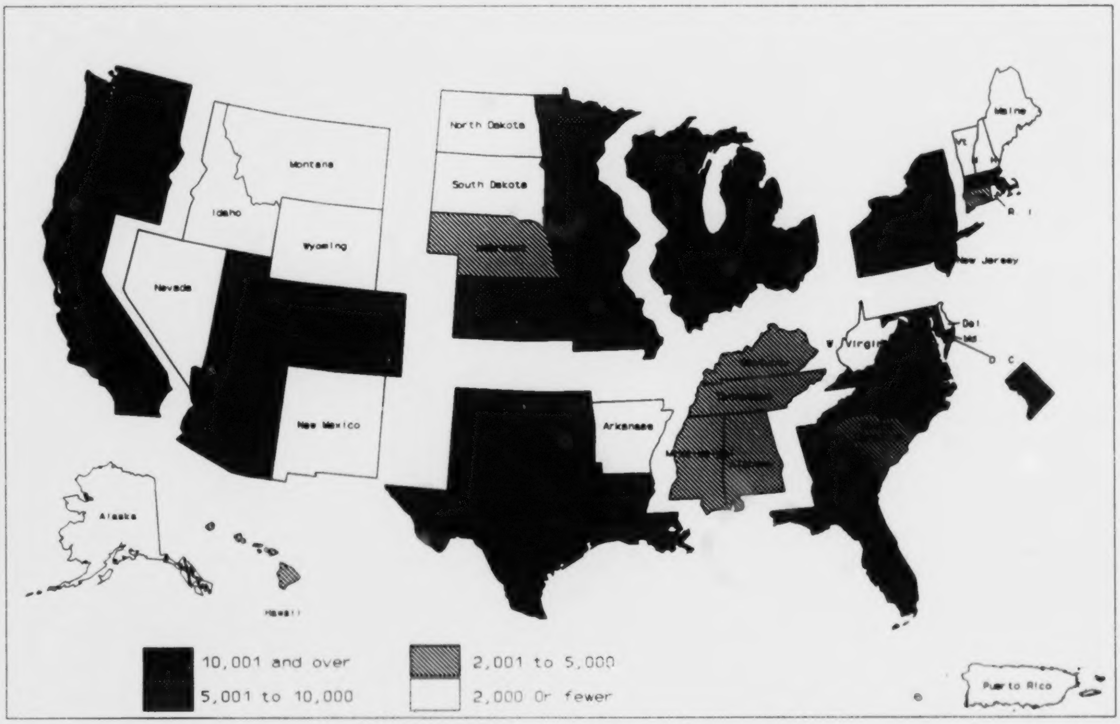
- Personal and family funds were the largest source of funding for 64 percent of the foreign students in U.S. institutions in 1991, down slightly from 67 percent in 1986. The proportion whose major source of support was a foreign government or university also declined, from more than 11 percent to about 6 percent during the same period. The difference was accounted for primarily by an increase in the amount contributed by the host colleges and universities, up from 12 percent to 19 percent. The majority of institutional awards are in the form of tuition remission or teaching assistantships.

- Throughout the period, the U.S. government was the primary source of support for only about 2 percent of all foreign students in U.S. institutions.

- California remained the leading host State, with more than 55,000 foreign students enrolled in California institutions. California's leading position is partly explained by the fact that 2 of the 10 institutions with the highest foreign enrollments in 1991 were located in that State.

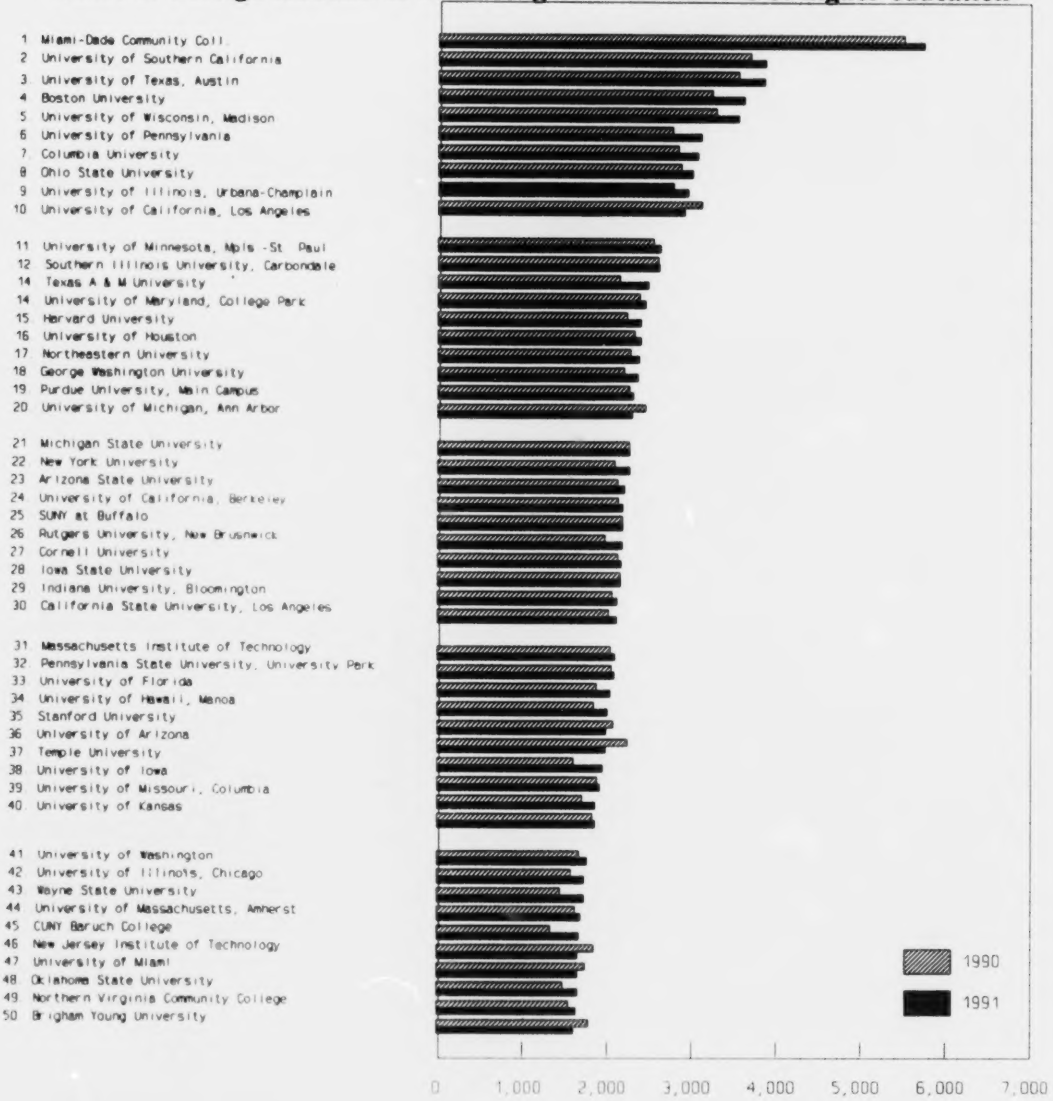
- Geographic concentration in a few States is not a new phenomenon, however; of the 10 leading States in total foreign enrollment, 9 were also in the top 10 a decade earlier. New Jersey replaced the District of Columbia in the #10 position. Together, the 10 States accounted for three-fifths of the total foreign enrollment in both 1982 and 1991.

Chart 7. Geographic concentration of foreign students enrolled in U.S. institutions of higher education: 1991


North Dakota
South Dakota
Montana
Idaho
Wyoming
Nevada
New Mexico
Arkansas
Maine
Vt
R I
New Jersey
W Virginia
Del
Md
D C
Alaska
Hawaii
Puerto Rico
10,001 and over
5,001 to 10,000
2,001 to 5,000
2,000 or fewer

SOURCE: Table A-7, Institute of International Education, *Open Doors*

Chart 8. Foreign students in 50 leading U.S. institutions of higher education



SOURCE: Table A-8, Institute of International Education, *Open Doors*

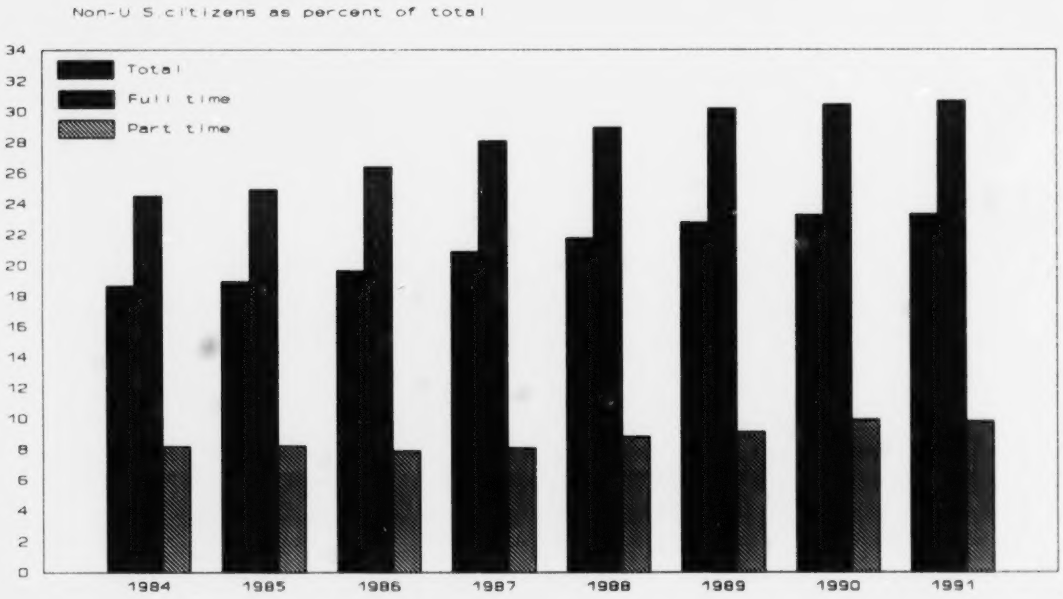
- Miami-Dade Community College remained the leading institution in foreign student enrollment, with nearly 6,000 foreign students in 1991; only one other two-year institution--Northern Virginia Community College--appeared among the leading 50 schools. The University of Southern California, with almost 3,900 foreign students, retained its # 2 ranking from 1988, 1989, and 1990. All of the top 10 institutions were among the top 10 in 1989 and 1990, and only one--Columbia University--fell outside the leading 10 in 1988.

Chapter 2. Non-U.S. Citizens in Graduate Science and Engineering Programs

- The 107,000 non-U.S. citizens (both permanent residents and those on temporary visas) enrolled in graduate programs in the science, engineering, and health fields in academic year 1991 represented 23 percent of all graduate students in those fields, up from 19 percent in 1984 when complete data on citizenship were first collected.

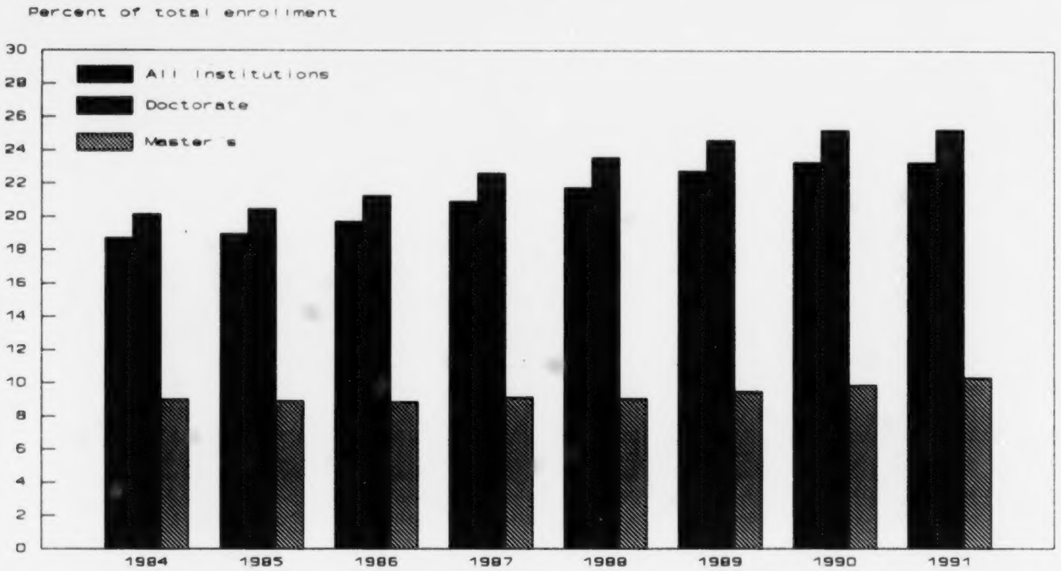
- The increase in the proportion of non-U.S. citizens over the past decade was most rapid during the middle eighties, primarily because of the slowdown during those years in the increase in U.S. citizens choosing graduate work in preference to immediate employment on receiving the baccalaureate. The overall health of the job market during those years is likely to have been a factor, as is the tightness of the current job market in the more recent increases in the number of U.S. citizens choosing graduate school.

Chart 9. Non-U.S. citizens as a percent of total graduate enrollment in the science, engineering, and health fields, by enrollment status



SOURCE: Table A-9, National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

Chart 10. Non-U.S. citizens as a proportion of total graduate S&E enrollment, by institutional highest degree granted



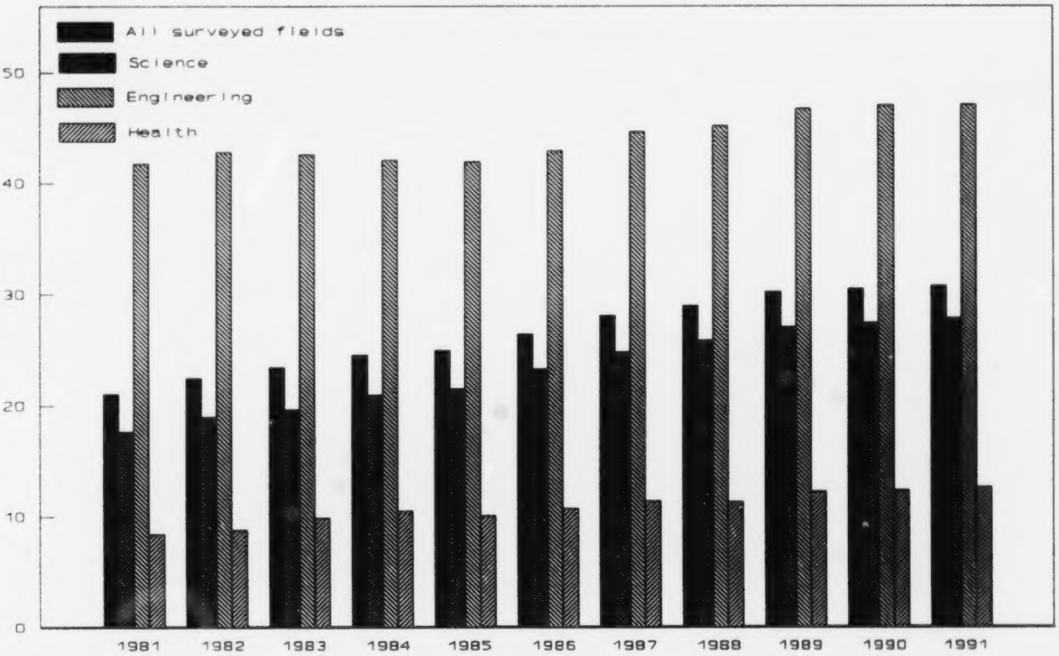
SOURCE: Table A-10, National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

- Non-U.S. citizens were more likely to be enrolled in doctorate-granting institutions than in those granting a master's as their highest degree; 94 percent of all non-U.S. citizens in graduate S&E programs were in doctorate-granting institutions. One-fourth of all S&E graduate students in doctorate-granting institutions were non-U.S. citizens, compared with only one-tenth of those in master's-granting institutions.

- The vast majority of all non-U.S. citizens in graduate science and engineering programs were enrolled on a full-time basis. Non-U.S. citizens accounted for nearly one-third of all full-time graduate students in the surveyed fields, but only about one-tenth of those enrolled part time. For this reason, the analyses of science and engineering fields that follow focus on full-time graduate students rather than on total enrollment.

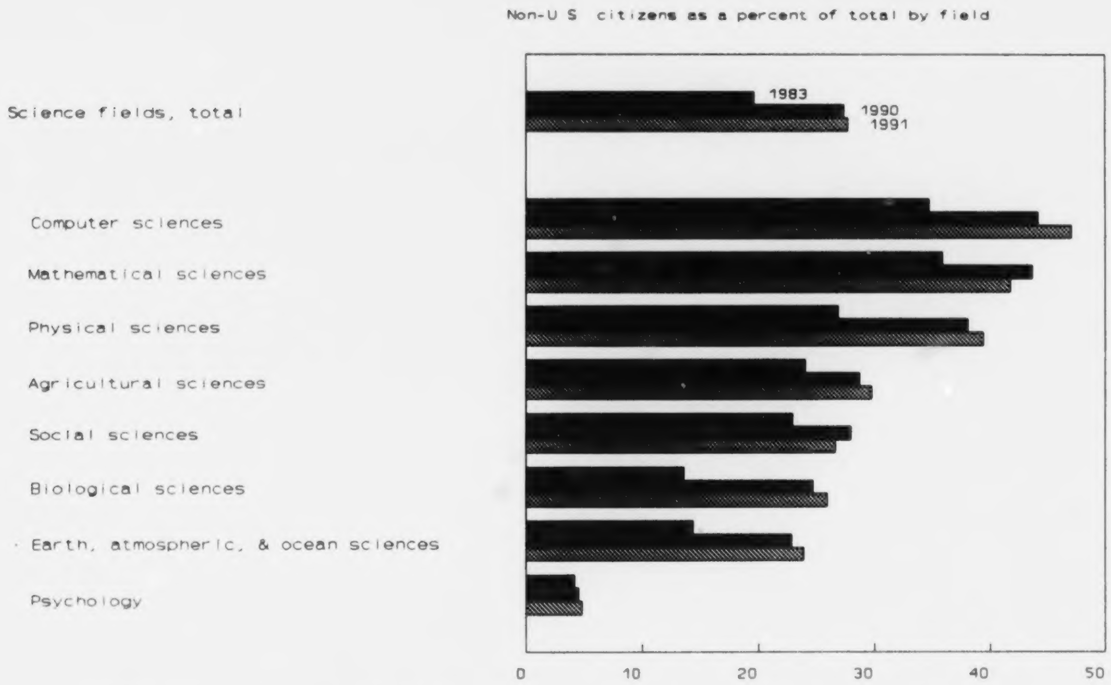
- Non-U.S. citizens enrolled full time in 1991 accounted for 28 percent of all full-time graduate science students, 47 percent of all full-time graduate engineering students, and 13 percent of those enrolled full time in the health fields. All three of these proportions represent significant increases over the comparable figures a decade ago--17 percent, 42 percent, and 8 percent, respectively.

Chart 11. Non-U.S. citizens enrolled full time as a percent of total full-time graduate enrollment, by major area of study



SOURCE: Table A-11, National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

Chart 12. Non-U.S. citizens enrolled full time in the sciences

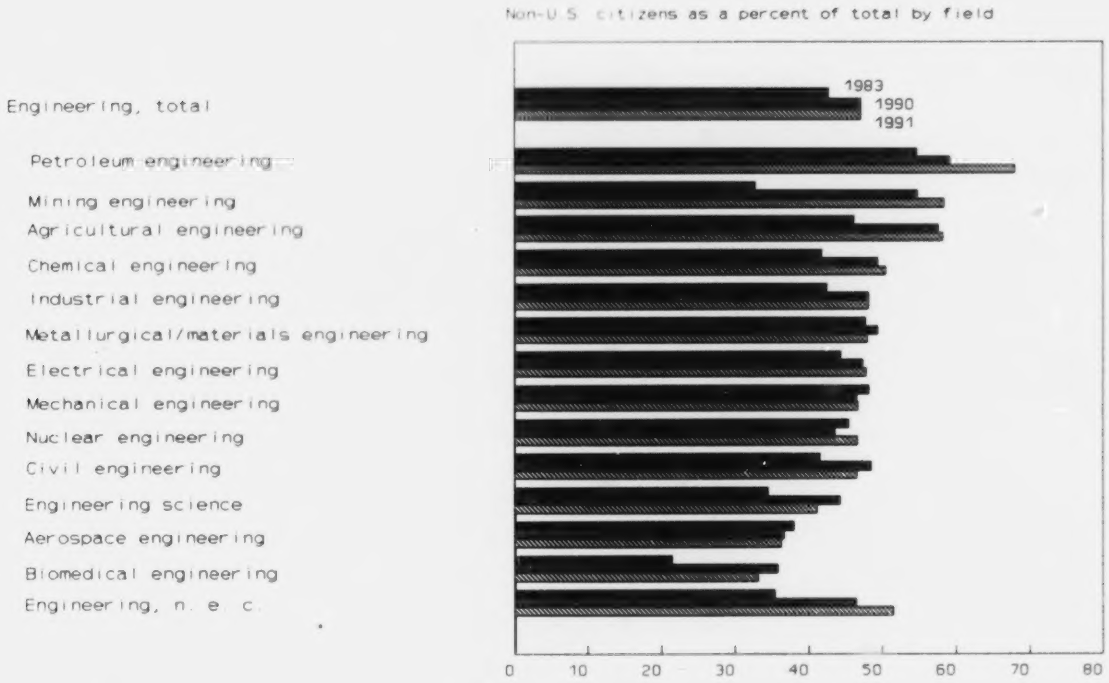


SOURCE: Table A-12, National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

- Non-U.S. citizens made up 48 percent of the full-time graduate students in the computer sciences in 1991, up from 35 percent in 1983. This is nearly twice the proportion for the sciences in general, and significantly higher than the proportion in the mathematical sciences, the field with the second highest proportion of non-U.S. citizens. At the opposite extreme, less than 5 percent of the full-time graduate students in psychology were non-U.S. citizens, a proportion that has been almost unchanged since the beginning of the survey series.

- Among the major engineering fields, petroleum engineering had the highest proportion of non-U.S. citizens enrolled full time, 68 percent, followed by mining engineering with 58 percent. Both fields showed substantial increases over 1990, when non-U.S. citizens accounted for 59 percent and 55 percent, respectively. It should be noted, however, that as the absolute numbers enrolled in both these fields are small, relatively minor changes in the numbers can result in significant proportional shifts. The 9-percentage point rise in petroleum engineering, for example, resulted from an increase of 30 non-U.S. citizens and a decrease of 52 in the number of U.S. citizens enrolled.

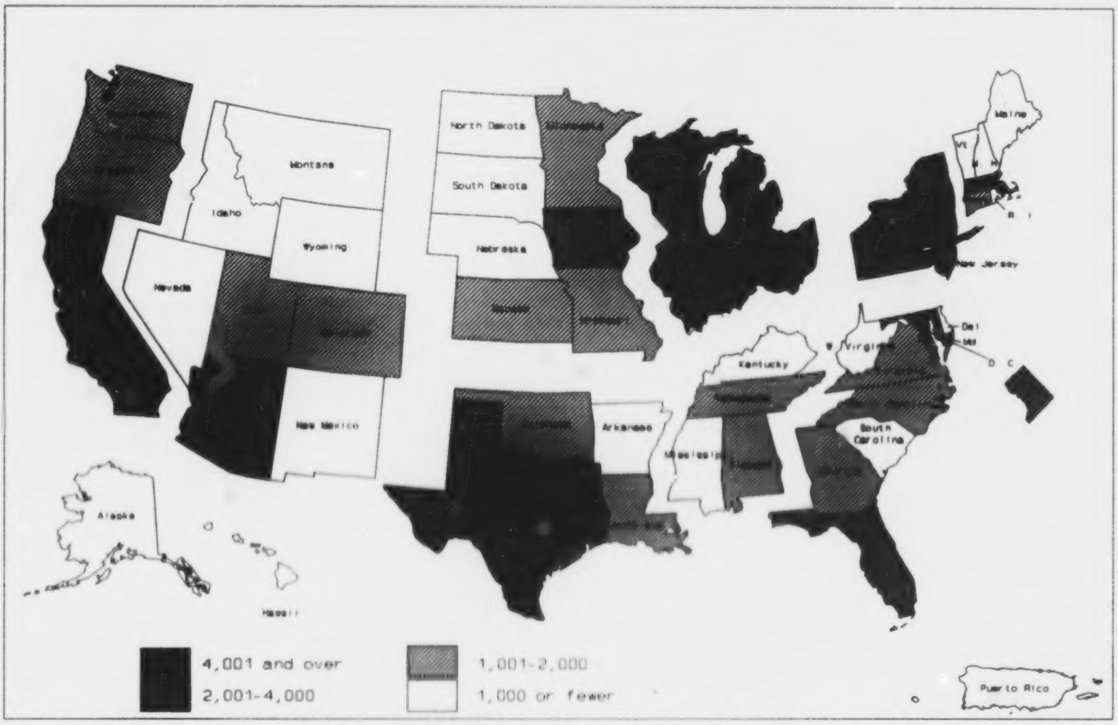
Chart 13. Non-U.S. citizens enrolled full time in engineering



NOTE: n.e.c. = not elsewhere classified

SOURCE: Table A-12, National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

Chart 14. Geographic distribution of non-U.S. citizens enrolled in graduate S&E programs in all institutions: 1991

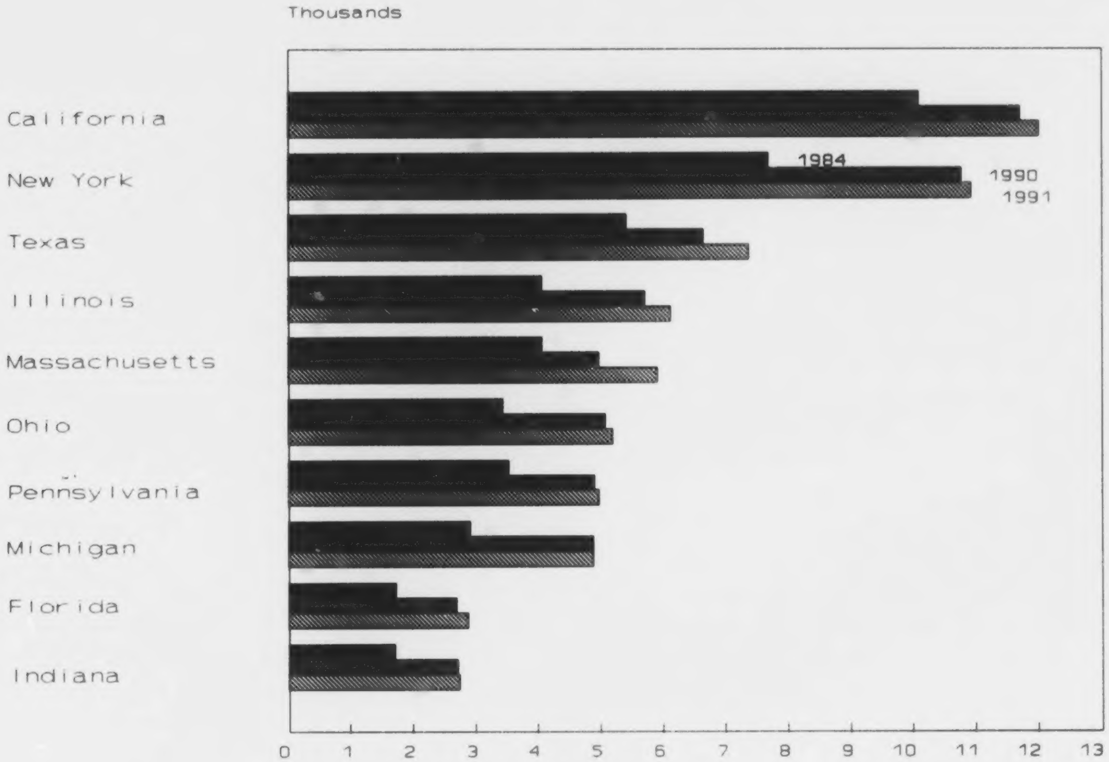

North Dakota
Montana
South Dakota
Idaho
Wyoming
Nebraska
Nevada
Kentucky
W Virginia
Maine
Vt
N H
R I
New Jersey
Del
Md
D C
South Carolina
Arkansas
Mississippi
New Mexico
Alaska
Hawaii
Puerto Rico
4,001 and over
2,001-4,000
1,001-2,000
1,000 or fewer

SOURCE: Table A-13, National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

- More than 12,000 non-U.S. citizens were enrolled in graduate S&E programs in California in 1991, enabling that State to retain the leading position it has held since the beginning of the survey series. New York ranked second with 10,900 non-U.S. citizens enrolled. Six other States were host to more than 4,000 non-U.S. citizens each, and together these eight States accounted for 54 percent of the non-U.S. citizens in U.S. academic institutions. By contrast, 20 States and Puerto Rico, each with fewer than 1,000 non-U.S. citizens in S&E programs, together accounted for only 7 percent of the total.

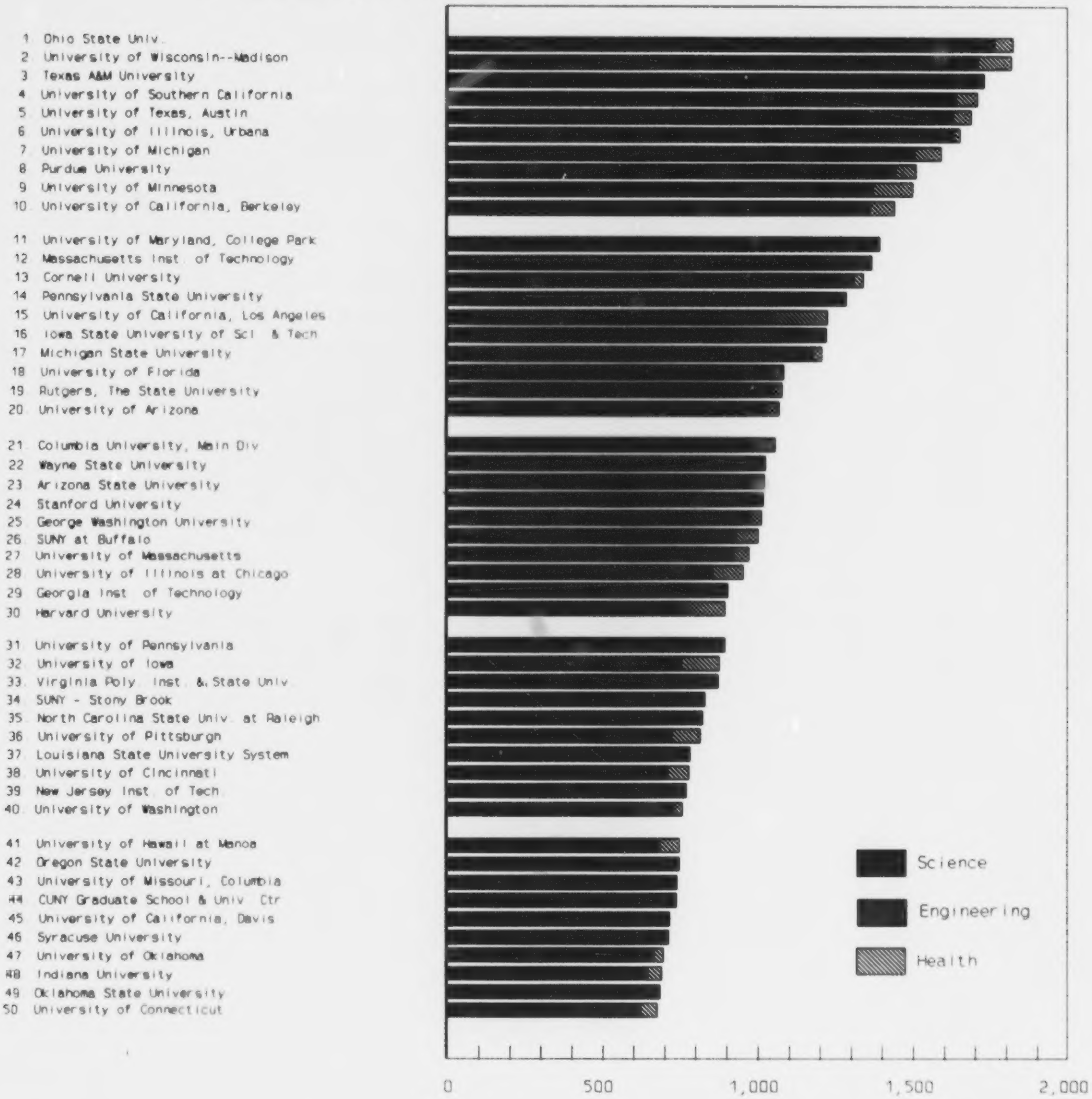
- Of the 10 leading States in terms of numbers of non-U.S. citizens enrolled in graduate S&E programs in 1991, 9 were also among the top 10 in 1990, with New Jersey dropping out to be replaced by Florida. The longer-term stability of this geographic concentration is evidenced by the fact that in 1984, the first year for which complete citizenship data are available, 9 of the 10 leading States were the same as in the most recent year, with Wisconsin making up the tenth.

Chart 15. Non-U.S. citizens enrolled in graduate S&E programs in 10 leading States



SOURCE: Table A-13, National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

Chart 16. Non-U.S. citizens enrolled in graduate S&E programs in 50 leading institutions, by broad area of study: 1991



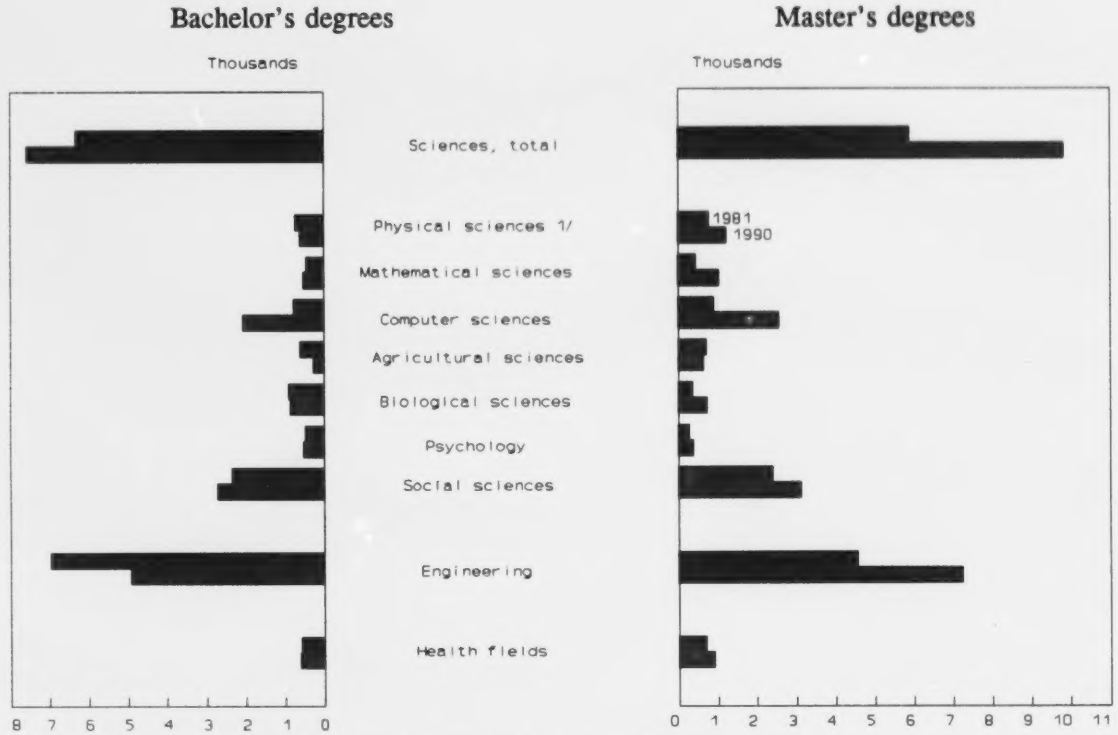
SOURCE: Table A-14, National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

- The continuing predominance of California and New York is explained by the fact that five California institutions and five New York institutions were ranked among the top 50 in terms of non-U.S. citizens enrolled in graduate S&E programs. As was the case for total foreign enrollment, little change in the ranking of institutions occurred from year to year.

Chapter 3. Non-U.S. Citizen Recipients of U.S. Science and Engineering Degrees

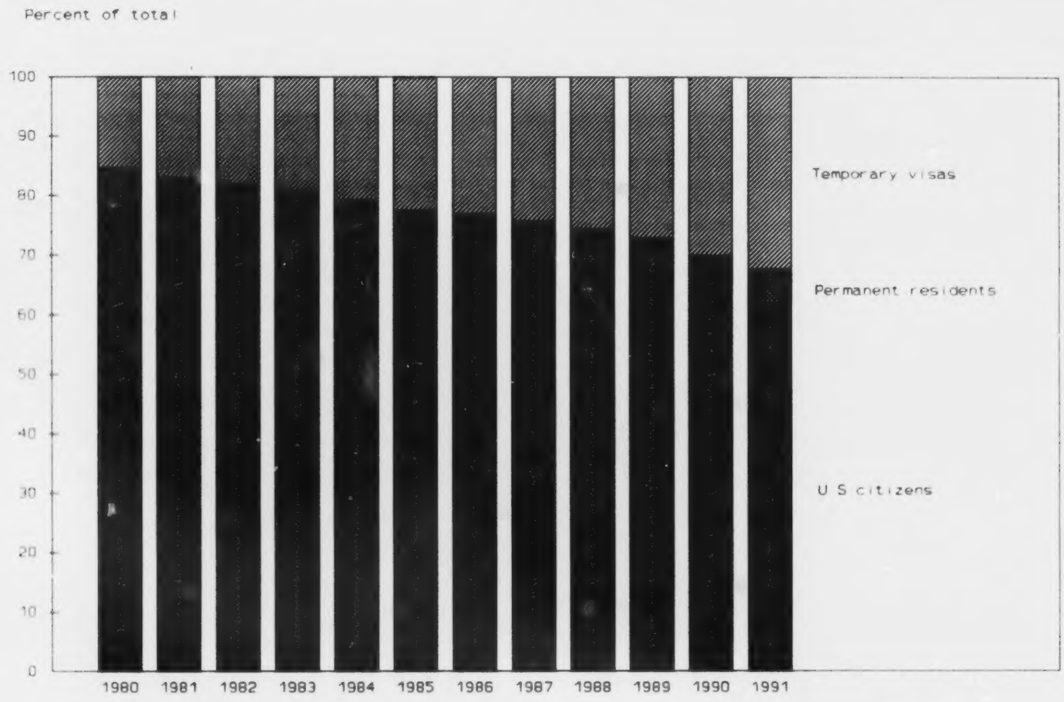
- Nonresident aliens (i.e., non-U.S. citizens on temporary visas) were the recipients of nearly 13,100 baccalaureates in the science, engineering, and health fields, and of 18,000 S&E master's degrees in 1990. A decade earlier, the numbers were 9,100 baccalaureates and 8,800 master's degrees. In percentage terms, the proportion of all baccalaureates in science, engineering, and health fields awarded to nonresident aliens increased only from 2 percent to 3 percent, while the proportion of master's degrees in these fields going to nonresident aliens nearly doubled, from 9 percent to 17 percent.

Chart 17. Bachelor's and master's degrees awarded to nonresident aliens



1/ Includes earth, atmospheric, and ocean sciences.
SOURCE: Table A-15, Department of Education/NCES, biennial data from Earned Degrees Surveys and Completions Surveys

Chart 18. Percent distribution of science and engineering doctorates awarded by U.S. institutions of higher education, by citizenship and visa status of recipient



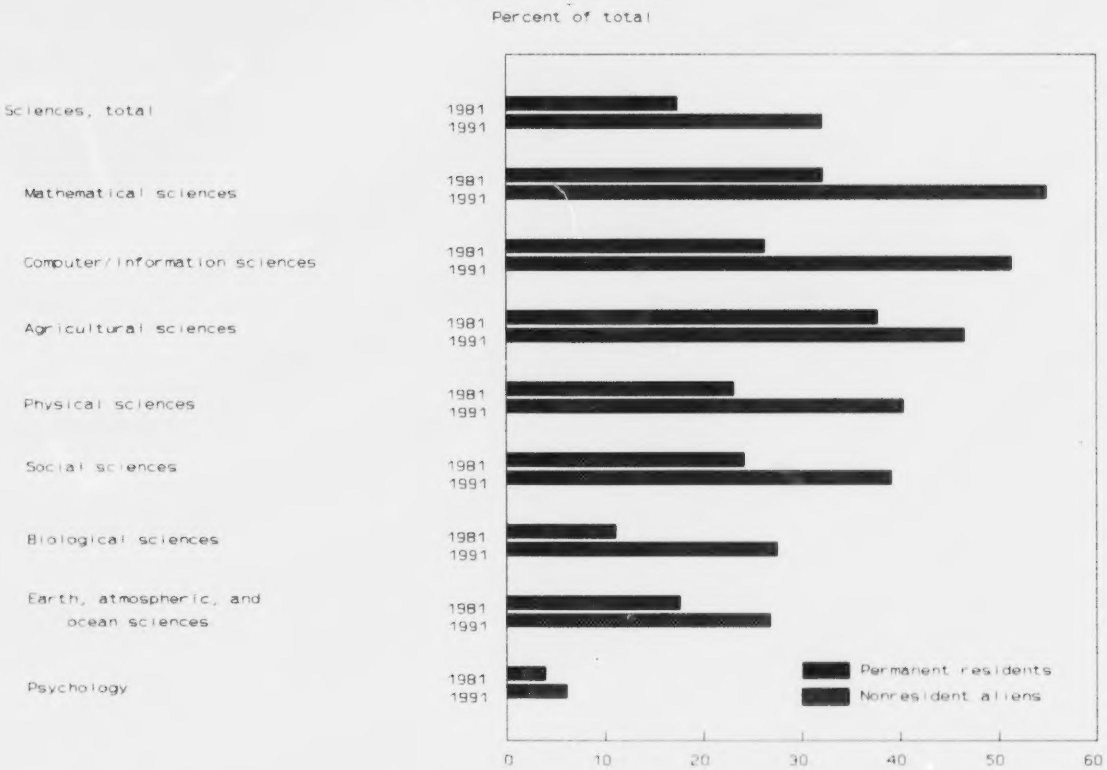
SOURCE: Table A-16, National Science Foundation/SRS, Doctorate Records File

- Although the total number of S&E doctorates awarded has risen steadily over the past decade--from 18,000 in 1980 to 23,700 in 1991--the number awarded to U.S. citizens has remained virtually level. The proportion of S&E doctorates earned by U.S. citizens has therefore declined gradually, from 79 percent to 62 percent. During the same 11-year period, the proportion earned by permanent residents who have not yet acquired citizenship has remained level in the 5- to 6-percent range, while the proportion earned by nonresident aliens on temporary visas has more than doubled, from 15 percent to 32 percent.

- Non-U.S. citizens earned 5,650 of the more than 18,500 doctorate degrees awarded in the sciences in 1991, accounting for 32 percent of the total. In 1981, non-U.S. citizens received 2,600 science doctorates, or 17 percent of the total awarded in that year. Less than 900--5 percent--of the doctorate recipients in 1991 were permanent residents.

- The proportion of all doctorates awarded to non-U.S. citizens was highest in the mathematical sciences, 55 percent of the total in 1991. Non-U.S. citizens were also in the majority among those receiving doctorates in the computer and information sciences, 51 percent. In both fields, however, nonresident aliens represented less than one half of the doctorate recipients; only when permanent residents are included were non-U.S. citizens a majority. At the opposite end of the spectrum, only 6 percent of the doctorates in psychology were earned by non-U.S. citizens. Of these, one-third were permanent residents and two-thirds nonresident aliens on temporary visas.

Chart 19. Percent of science doctorates awarded to non-U.S. citizens, by field and visa status



SOURCE: Table A-17, National Science Foundation/SRS, Doctorate Records File

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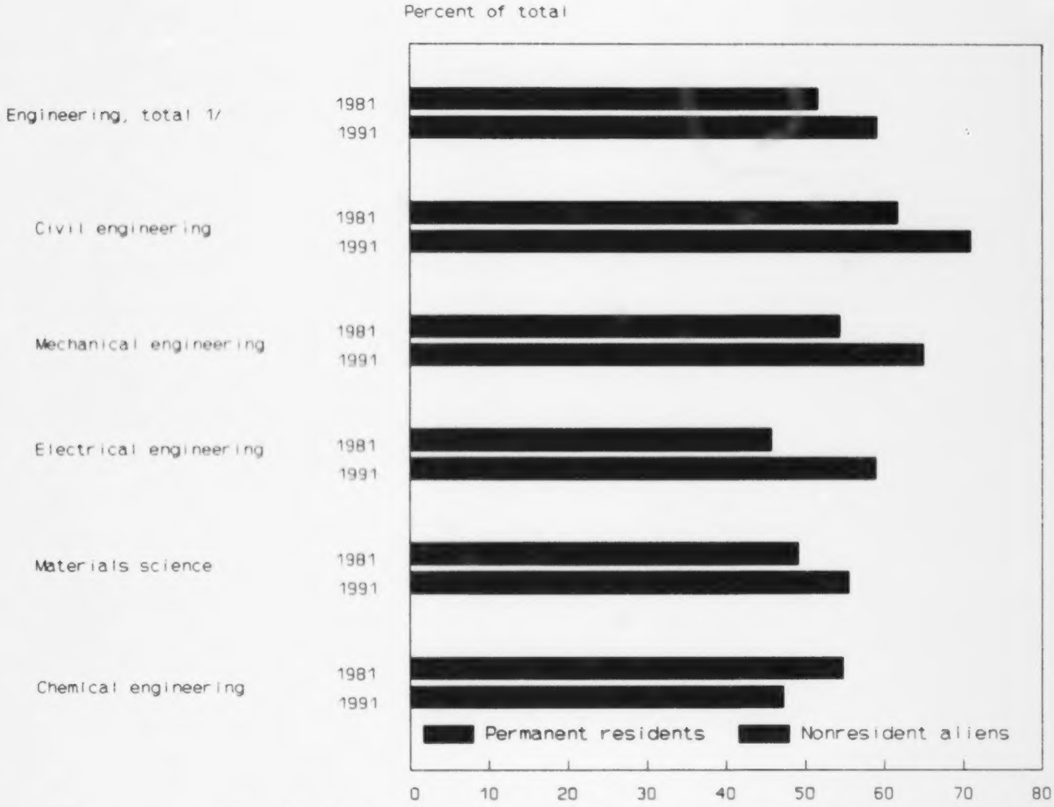
Chart 20. Percent of engineering doctorates awarded to non-U.S. citizens, by field and visa status



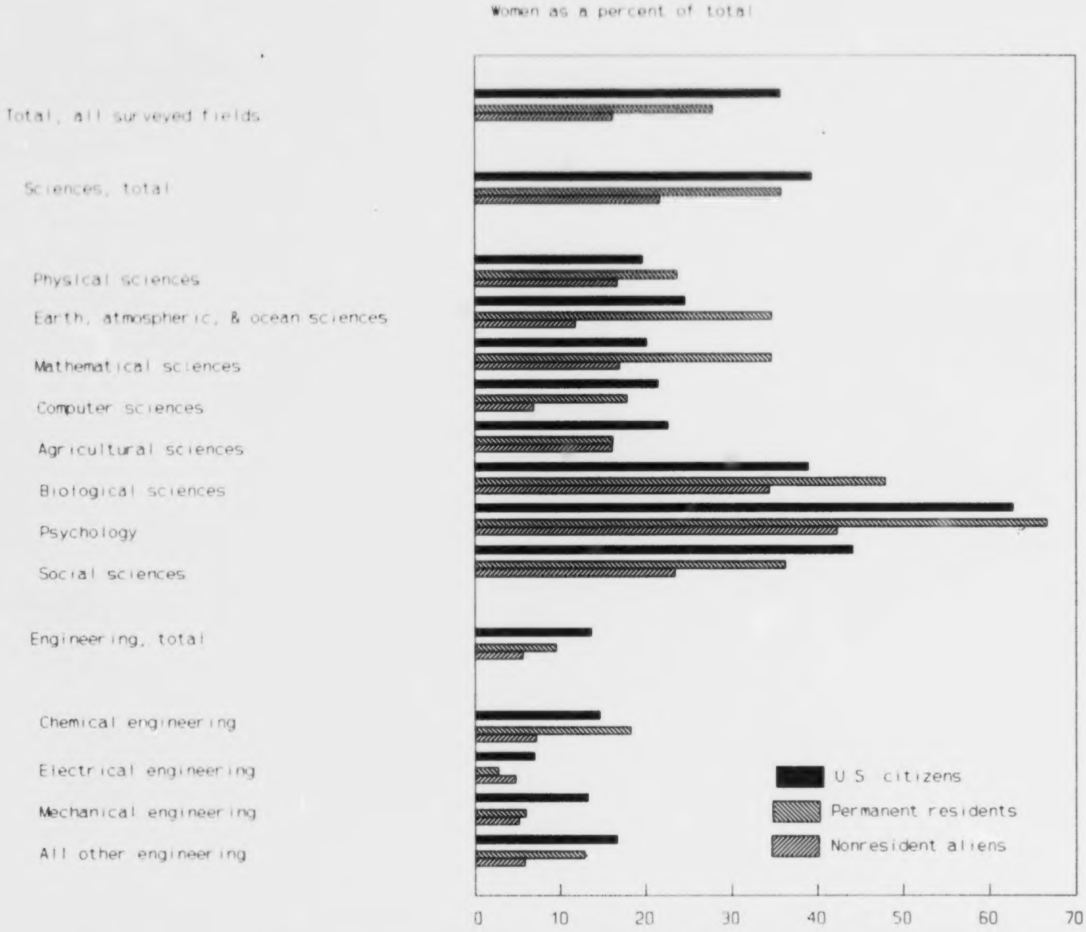
1/ Total includes engineering fields not shown separately.
SOURCE: Table A-18, National Science Foundation/SRS, Doctorate Records File

- Although the proportion of all doctorates awarded to non-U.S. citizens tended to be higher in engineering than in science--59 percent overall--the increase over the decade of the eighties was not nearly as rapid as that in the science fields. In civil engineering, for example, the 1991 proportion was 71 percent, up from 62 percent in 1981. Other fields in which significant majorities of the doctorates awarded were earned by non-U.S. citizens were mechanical engineering (65 percent, up from 54 percent a decade earlier) and electrical engineering (59 percent, up from 46 percent). In both civil and mechanical engineering, nonresident aliens alone made up a majority of the doctorate recipients in 1991.

- Women earned a lower proportion of all doctorates awarded to non-U.S. citizens in every field than of those awarded to U.S. citizens; however, the proportions for permanent residents closely approached those for U.S. citizens.

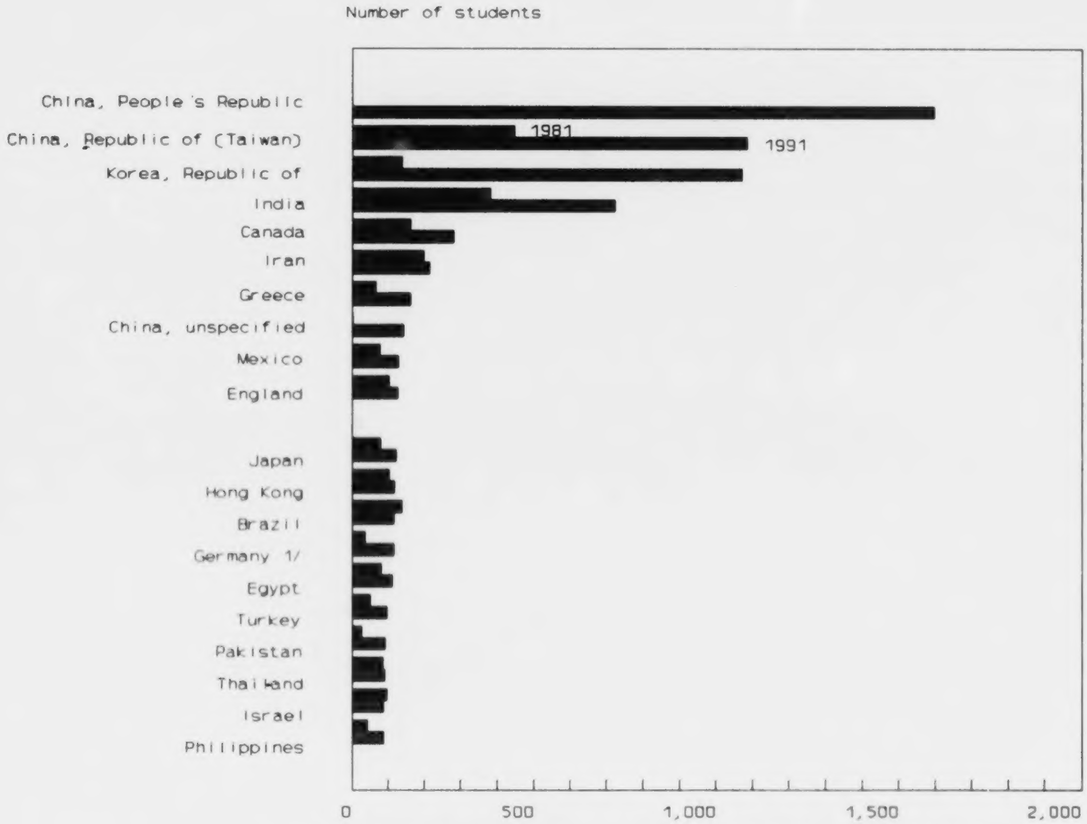
- In all three categories, the highest proportions of all doctorates awarded to women were in psychology--63 percent for U.S. citizens, 67 percent for permanent residents, and 42 percent for nonresident aliens. At the other extreme, women earned the lowest proportion of all doctorates in engineering in all citizenship categories.

Chart 21. Percent of science and engineering doctorates awarded to women, by field and citizenship status: 1991



SOURCE: Table A-19, National Science Foundation/SRS, Doctorate Records File

Chart 22. Non-U.S. citizens from 20 leading countries receiving S&E doctorates



1/ Includes the Federal Republic of Germany and the former German Democratic Republic, as well as Germany, unspecified.

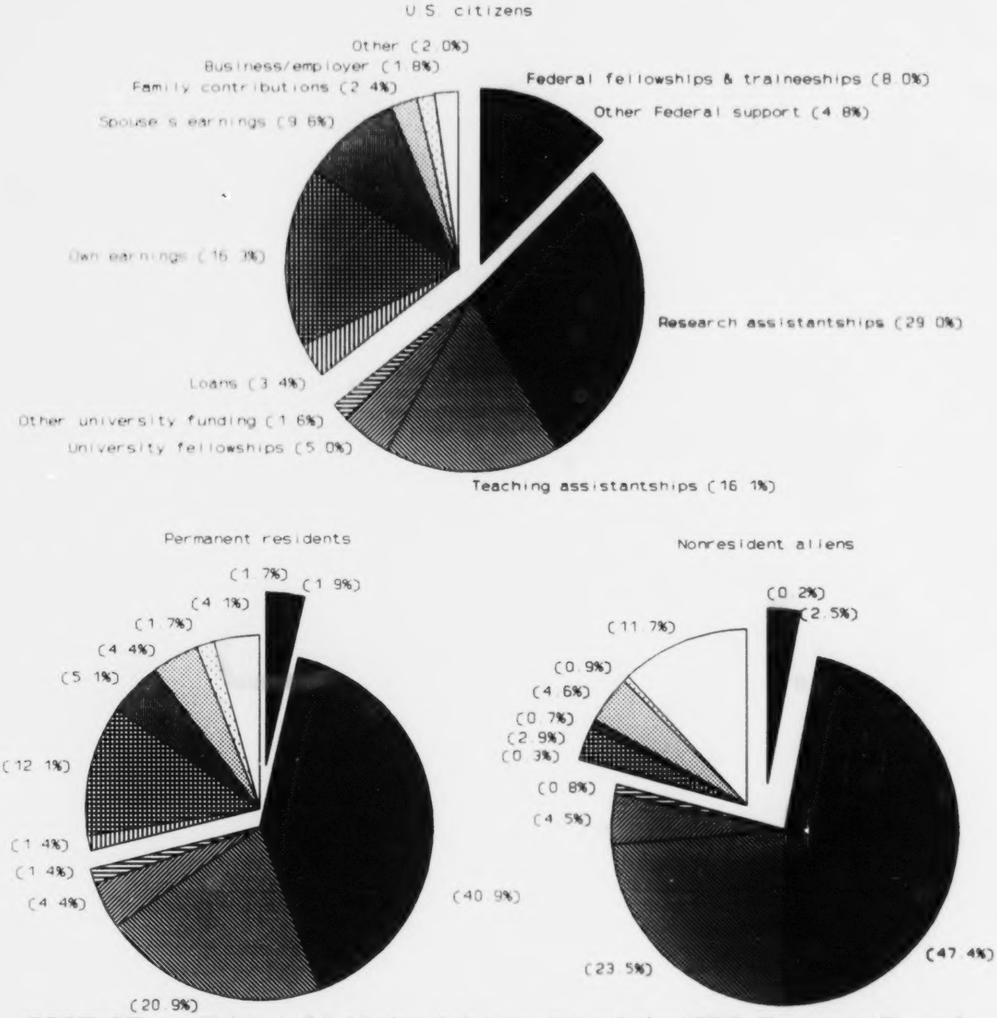
SOURCE: Table A-20, National Science Foundation/SRS, Doctorate Records File

- The two leading countries in terms of number of S&E doctorates awarded by U.S. universities and colleges were the People's Republic of China and the Republic of China (Taiwan),which is not surprising as these were also the two leading sources of S&E graduate students. Again, Mainland China was not even represented among the home countries of the doctorate recipients of 1981. When combined with "China, unspecified," the proportion of all S&E doctorates awarded to Chinese nationals reached 33 percent in 1991.

- Other "Pacific rim" areas ranked among the top 20 were the Republic of Korea, Japan, Hong Kong, and the Philippines. With Indonesia, Australia, and New Zealand, this area of the world was the home of 51 percent of all S&E doctorates awarded by U.S. academic institutions in 1991, compared with 22 percent of the 1981 total.

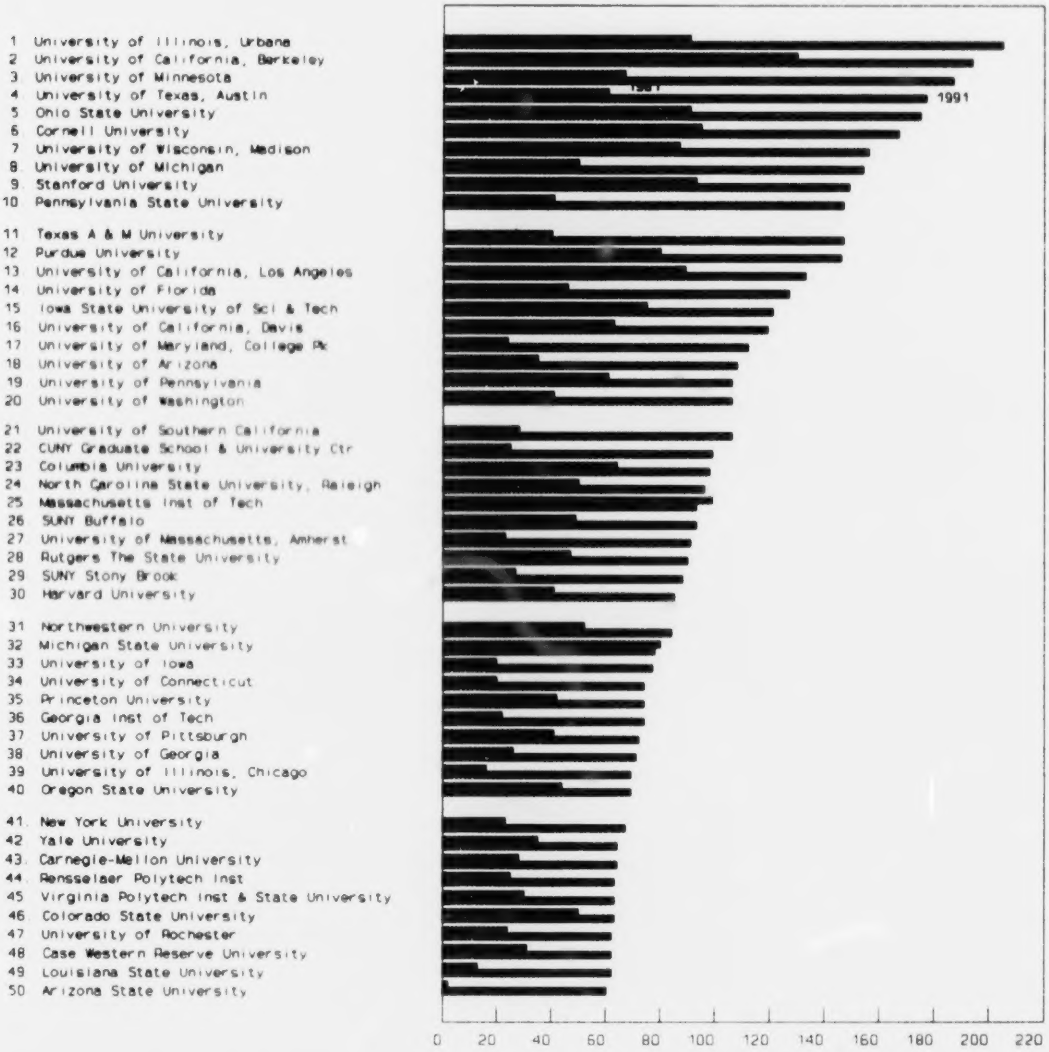
- Non-U.S. citizens differed significantly from their U.S. citizen colleagues in terms of their primary source of support while in graduate school. Whereas 11 percent of the U.S. citizens for whom source of support was known were primarily supported from Federal funds, only 2 percent of the non-U.S. citizens reported the Federal Government as their primary source of support.

Chart 23. Primary source of support while in graduate school for S&E doctorate recipients by citizenship status: 1991



SOURCE: Table A-21, National Science Foundation/SRS, Doctorate Records File

Chart 24. Science and engineering doctorates awarded to non-U.S. citizens by 50 leading institutions



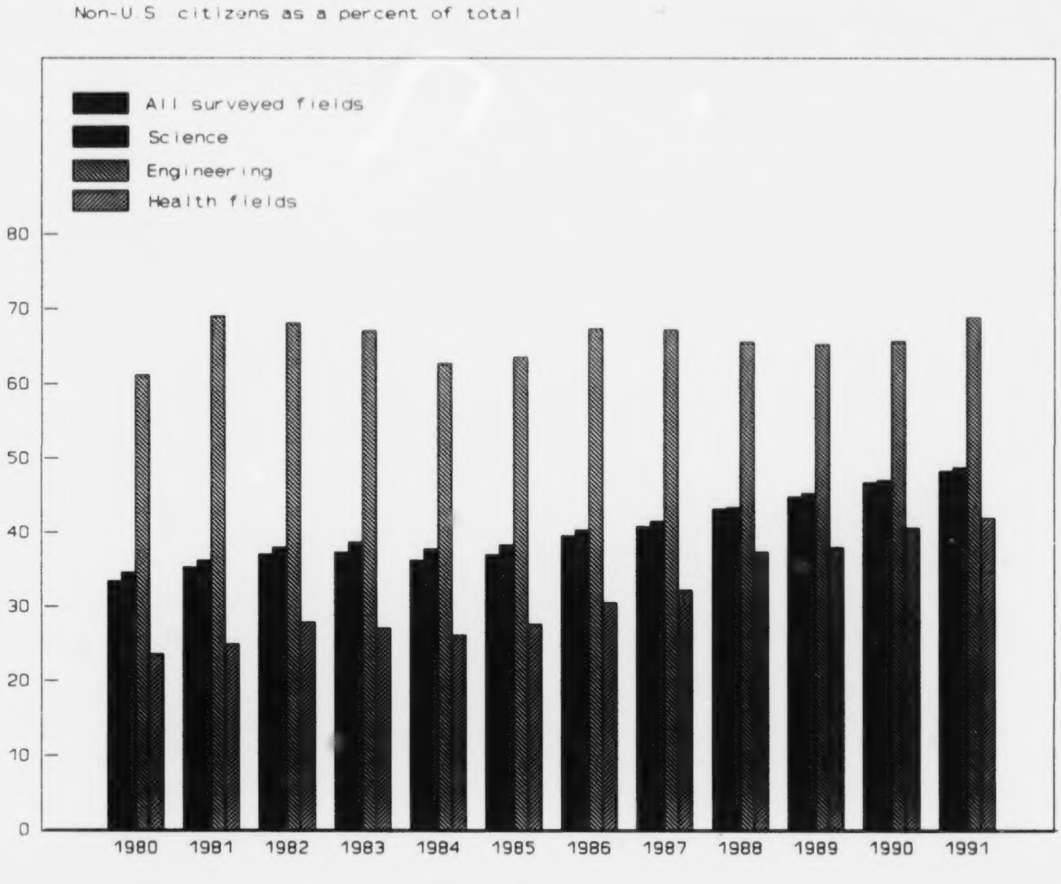
SOURCE: Table A-22, National Science Foundation/SRS, Doctorate Records File

- As was the case for graduate enrollments, non-U.S. citizens receiving S&E doctorates were concentrated in a few institutions, with the top 10 schools accounting for one-fifth of the total and the leading 50 institutions accounting for about three-fifths of all S&E doctorates awarded to non-U.S. citizens. Most of these institutions were also among the top 50 in total foreign enrollment and in non-U.S. citizens enrolled in graduate S&E programs.

Chapter 4. Employment of Non-U.S. Citizens in U.S. Institutions of Higher Education

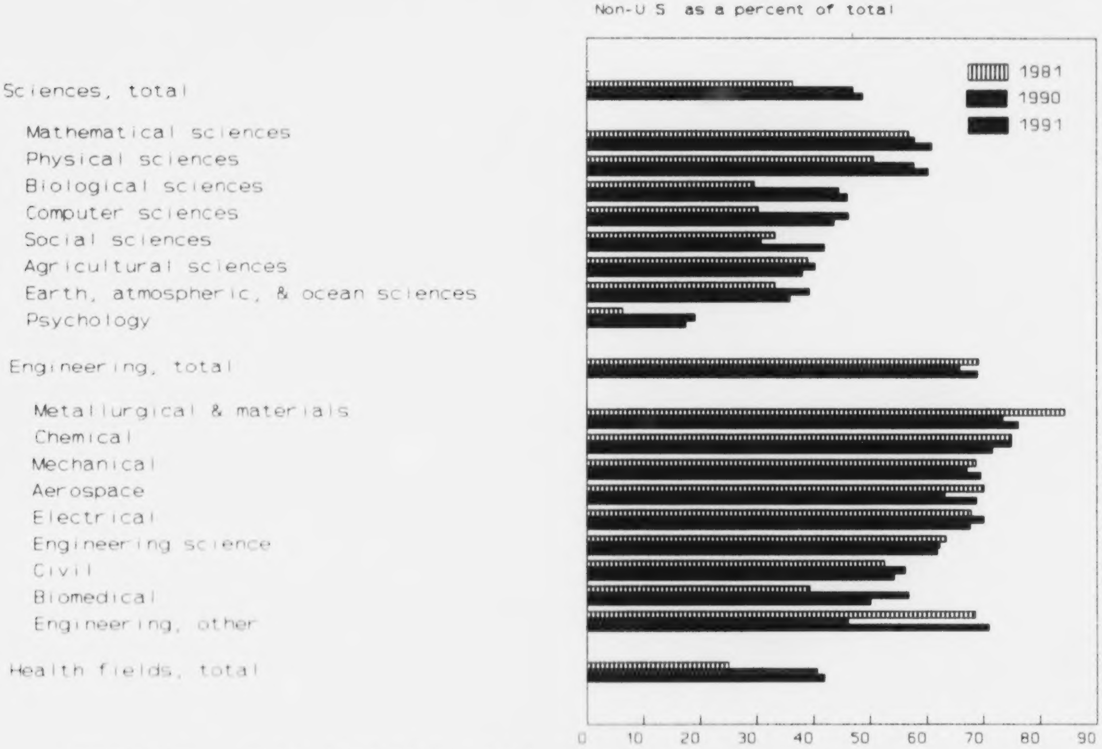
- The number of non-U.S. citizens with postdoctoral appointments in the science, engineering, and health fields in doctorate-granting institutions (all other institutions are believed to have employed fewer than 50) reached nearly 14,700 in 1991, or 48 percent of all postdoctoral appointees--up from 6,100 or 34 percent in 1980. Non-U.S. citizens made up 49 percent of all postdoctoral appointees in the sciences and 42 percent in the health fields, but accounted for 69 percent of those in engineering. In 1980, the proportions were 35 percent, 25 percent, and 61 percent, respectively.

Chart 25. Non-U.S. citizens as a percent of total S&E postdoctoral appointees in doctorate-granting institutions



SOURCE: Table A-24, National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

Chart 26. Non-U.S. citizens as a percent of all postdoctoral appointees in the science, engineering, and health fields in doctorate-granting institutions, by field



SOURCE: Table A-24, National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

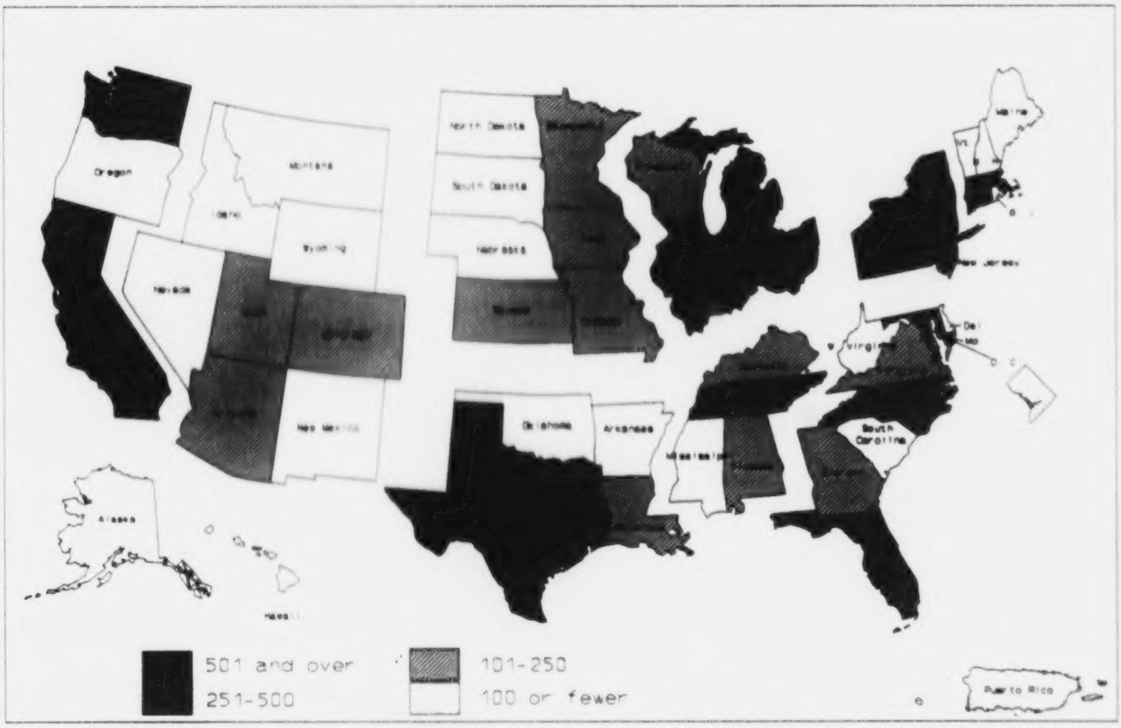
- The highest proportion of non-U.S. citizens holding postdoctoral appointments among the science fields were in the mathematical sciences--61 percent--although the largest number--more than 5,700--were in the biological sciences. More than two-thirds of the postdoctoral appointees, both U.S. citizens and others, were in the biological and physical sciences, reflecting the emphasis on postdoctoral training as a step toward full faculty status that characterizes both these fields.

- Relatively few postdoctoral appointees (fewer than 2,000 in 1991), either U.S. citizens or noncitizens, were employed in the engineering fields; and of these, more than one-half were in chemical, metallurgical/materials, and mechanical engineering. Metallurgical/materials engineering had the highest proportion of non-U.S. citizens, 76 percent, followed by chemical engineering with 72 percent.

- The most rapid growth in both the number and proportion of non-U.S. citizens holding postdoctoral appointments occurred in the health fields, where the number increased from 1,100 to 3,400 and the proportion from 25 percent to 42 percent over the past decade.

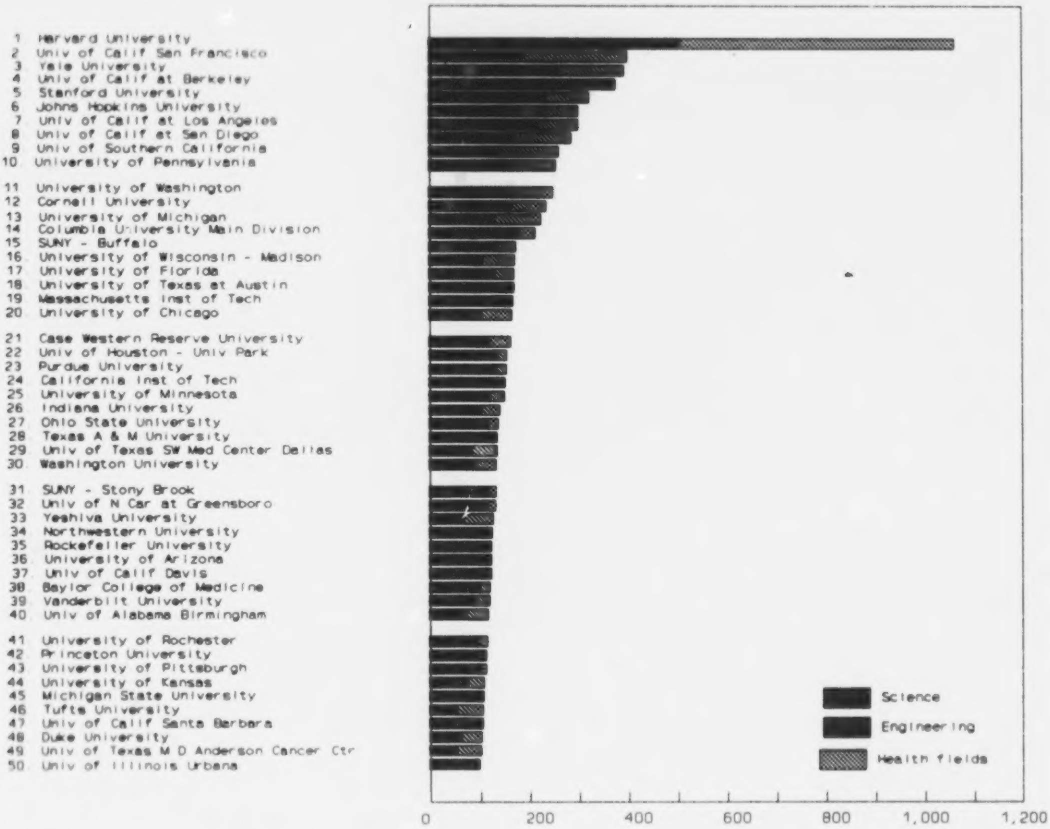
- The pattern of geographic distribution of postdoctoral appointees resembled that of graduate students, as might be expected since the same institutions that enroll large numbers of graduate students also employ most postdoctoral appointees. California led in the total number of non-U.S. citizen postdoctoral appointees, with over 2,500, followed by Massachusetts (almost 1,600), New York (1,400), and Texas (1,200). These four States together accounted for 46 percent of all non-U.S. citizens with postdoctoral appointments. At the other end of the scale, the 21 States plus the District of Columbia and Puerto Rico, with 100 or fewer non-U.S. citizen postdoctoral appointees each, accounted for only 6 percent of the total.

Chart 27. Geographic distribution of non-U.S. citizen postdoctoral appointees in the science, engineering, and health fields: 1991


Oregon
Montana
Idaho
Wyoming
Nevada
New Mexico
North Dakota
South Dakota
Nebraska
Kansas
Oklahoma
Arkansas
Mississippi
South Carolina
Maine
Vt
New Jersey
Del
Md
D.C.
W. Virginia
Alaska
Hawaii
Puerto Rico
501 and over
251-500
101-250
100 or fewer

SOURCE: Table A-25, National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

Chart 28. Non-U.S. citizen postdoctoral appointees in the science, engineering, and health fields in 50 leading universities and colleges: 1991



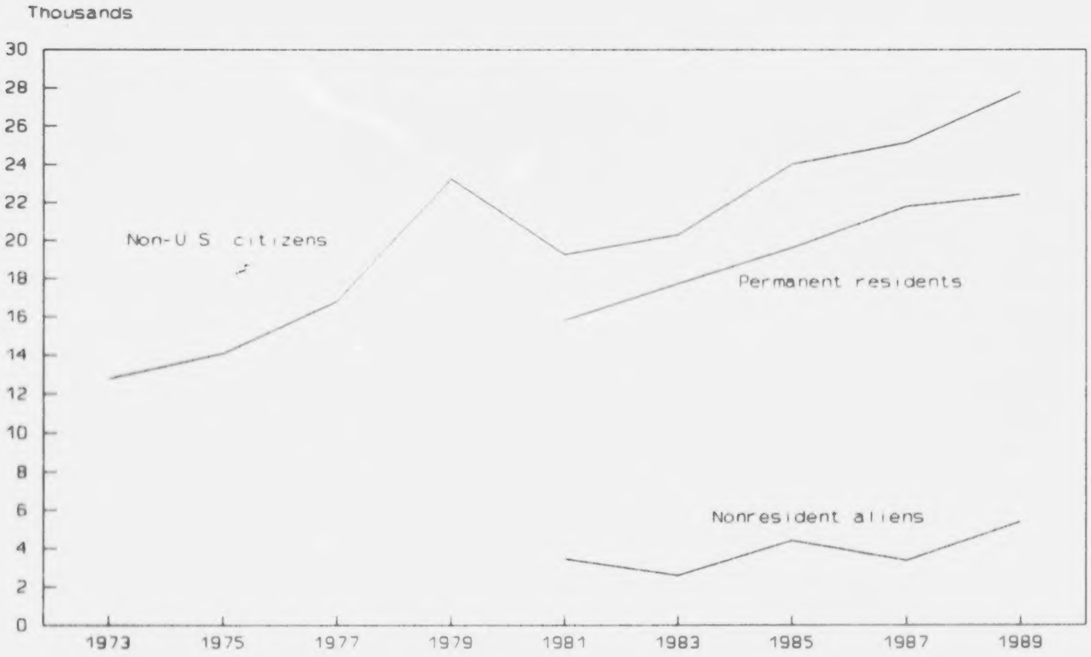
SOURCE: Table A-26, National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

- As was implied in the previous discussion, each of the leading States owed its position to one or a few major institutions. The most significant example of this is Massachusetts, which was ranked second on the basis of Harvard University's 1,065 noncitizen postdoctoral appointees--more than twice as many as the second-ranked institution, the University of California at San Francisco. In all, four institutions in the University of California System, along with the University of Southern California and Stanford University, were ranked in the top 10, with two more University of California schools and the California Institute of Technology in the leading 50 institutions. Altogether, the top 40 institutions accounted for three-fifths of the non-U.S. citizens with postdoctoral appointments.

- According to sample data collected in the National Science Foundation's Survey of Doctorate Recipients, non-U.S. citizens accounted for approximately 6 percent of the 449,000 scientists and engineers employed in the United States in 1989, the latest year for which data are available. An additional 11 percent of all scientists and engineers were foreign-born U.S. citizens. In absolute terms, these proportions would work out to about 28,000 scientists and 45,000 engineers.

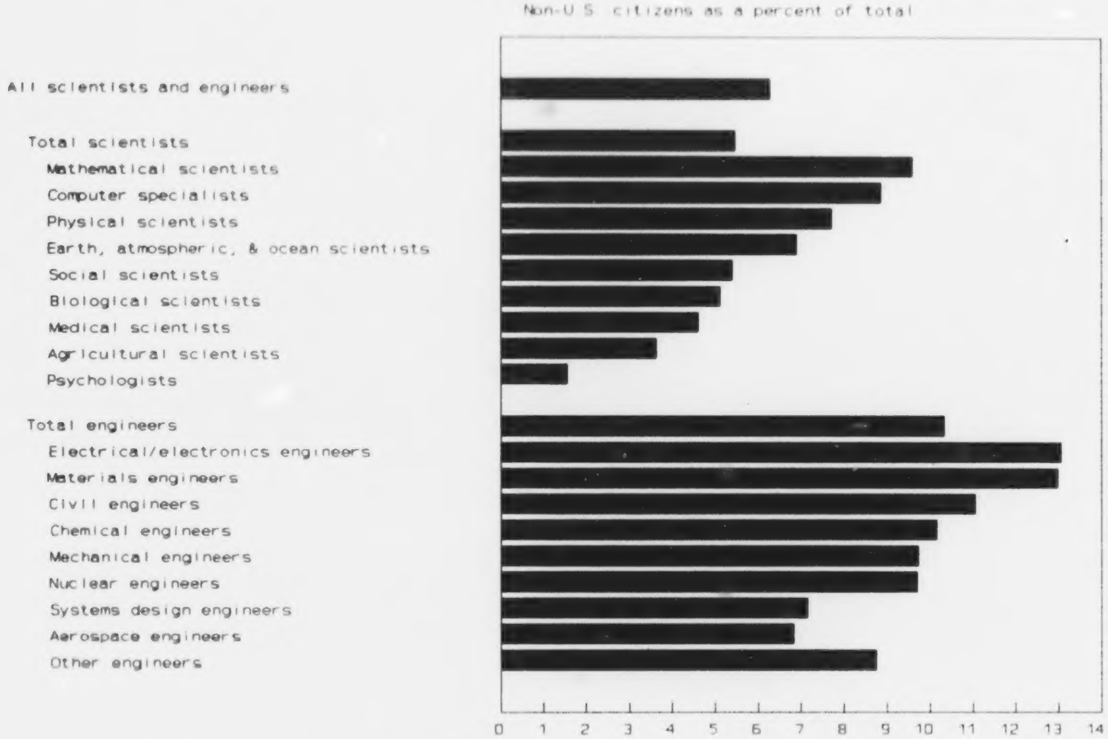
- Since 1983, when data on non-U.S. citizens by visa status were first collected, permanent residents have outnumbered those on temporary visas by approximately 5 to 1, in contrast to the distribution of doctorate recipients presented in chapter 3, which indicated that most of the non-U.S. citizens receiving doctorates from American universities were on temporary visas and expected to return to their home countries.

Chart 29. Doctoral scientists and engineers without U.S. citizenship employed in the United States, by visa status



SOURCE: Table A-27, National Science Foundation/SRS, Survey of Doctorate Recipients

Chart 30. Non-U.S. citizens as a percent of all employed scientists and engineers, by field: 1989



SOURCE: Table A-28, National Science Foundation/SRS, Survey of Doctorate Recipients

- Non-U.S. citizens accounted for a higher proportion of the totals employed in the engineering fields than in the sciences, 10 percent vs. less than 6 percent in 1989. This reflects the pattern already observed in both graduate enrollment and postdoctoral appointments. Among the science fields, the mathematical sciences again showed the largest proportion of non-U.S. citizens, almost 10 percent, and psychology the smallest, less than 2 percent. In numerical terms, however, the physical sciences led with an estimated 5,400, equivalent to over one-fourth of the total.

- Electrical/electronics engineers and materials engineers shared the lead in terms of the proportion of non-U.S. citizens, with 13 percent in both fields. At the other extreme, less than 7 percent of the aeronautical and astronautical engineers were non-U.S. citizens.

Appendix A
Detailed Statistical Tables

Additional data tables, including individual institution listings, detailed field data, and discontinued time series for which no additional years of data are available since the previous publication, are available in a pamphlet entitled *Foreign Participation in U.S. Science and Engineering: Supplementary Data Tables.* Copies may be ordered without charge from J. G. Huckenpöhler, Science and Engineering Education and Human Resources Program, Division of Science Resources Studies, National Science Foundation, 1800 G Street , N. W., Room L-609, Washington, D. C. 20550.

Foreign Students in U.S. Institutions of Higher Education

A-1. U.S. institutions of higher education reporting foreign students and number of foreign students reported: 1955-91 39
A-2. Total enrollment in all institutions of higher education, by level and citizenship: 1976-91 40
A-3. Number of foreign students enrolled in all U.S. institutions of higher education, by continent of origin: 1955-91 42
A-4. Number of foreign students enrolled in all U.S. institutions of higher education, by home country: 1984-91 44
A-5. Number of foreign students enrolled in all U.S. institutions of higher education, by field of study: selected years, 1955-91 48
A-6. Number of foreign students enrolled in all U.S. institutions of higher education, by primary source of support: 1986-91 48
A-7. Number of foreign students enrolled in all U.S. institutions of higher education, by geographic distribution: 1982-91 49
A-8. Number of foreign students enrolled in the leading 100 U.S. institutions of higher education, ranked by total foreign enrollment: 1955 and 1985-91 50

Non-U.S. Citizens in Graduate Science and Engineering Programs

A-9. Total and non-U.S. citizen graduate students in the science, engineering, and health fields in all U.S. institutions, and percent non-U.S. citizens, by enrollment status and field: 1984-91 52
A-10. Total and non-U.S. citizen graduate students in the science, engineering, and health fields in all U.S. institutions, and percent non-U.S. citizens, by institutional highest degree granted and field: 1983-91 55
A-11. Full-time graduate students in the science, engineering, and health fields in all U.S. institutions, by citizenship and field: 1976-91 58

A-12. Total and non-U.S. citizen full-time graduate students in the science, engineering, and health fields in all U.S. institutions, and percent non-U.S. citizens, by field: 1983-91 60
A-13. Total and non-U.S. citizen graduate students in the science, engineering, and health fields in all U.S. institutions, and percent non-U.S. citizens, by geographic distribution: 1983-91 63
A-14. Non-U.S. citizens enrolled in graduate programs in the science, engineering, and health fields in all U.S. institutions reporting non-U.S. citizens, ranked by non-U.S. citizen enrollment in surveyed fields: 1991 66

Non-U.S. Citizen Recipients of U.S. Science and Engineering Degrees

A-15. Number of bachelor's and master's degrees in science, engineering, and health fields awarded to nonresident aliens by all U.S. institutions: selected years, 1977-90 76
A-16. Number of science and engineering doctorates awarded by all U.S. institutions, by citizenship: 1960-91 78
A-17. Number of science doctorates awarded by all U.S. institutions, by field and citizenship status: 1979-91 79
A-18. Number of engineering doctorates awarded by all U.S. institutions, by field and citizenship status: 1979-91 82
A-19. Percent of science and engineering doctorates awarded to women, by field and citizenship status: 1991 84
A-20. Country of citizenship of non-U. S. citizens awarded science and engineering doctorates by visa type: 1979-91 85
A-21. Primary source of support in graduate school for science and engineering doctorate recipients, by citizenship status: 1991 94
A-22. Science and engineering doctorates awarded to non-U.S. citizens, by institution ranked by 1991 doctorates awarded to non-U.S. citizens: 1979-91 97
A-23. Postgraduation plans of science and engineering doctorates by major field and citizenship status: 1991 103

Employment of Non-U.S. Citizens in U.S. Institutions of Higher Education

A-24. Total and non-U.S. citizen science and engineering postdoctoral appointees in doctorate-granting institutions, and percent non-U.S. citizens, by field: 1980-91 107
A-25. Total and non-U.S. citizen science and engineering postdoctoral appointees in doctorate-granting institutions, and percent non-U.S. citizens, by geographic distribution: 1980-91 110
A-26. Total and non-U.S. citizen postdoctoral appointees in U.S. doctorate-granting institutions, and percent non-U.S. citizens, by area, ranked by total non-U.S. citizen postdoctoral appointees: 1991 113
A-27. Employed doctoral scientists and engineers by citizenship status: selected years, 1973-89 118
A-28. Employed doctoral scientists and engineers by field and citizenship: 1989 . . . 118

Table A-1. U.S. institutions of higher education reporting foreign students and number of foreign students reported: 1955-91

Academic year ending in --	Institutions surveyed	Institutions responding	Percent responding	Institutions reporting foreign students	Percent reporting foreign students	Institutions reporting no foreign students	Percent reporting no foreign students	Number of foreign students reported	Percent change from previous year
1955 ...	2,855	2,642	92.5	1,629	61.7	1,013	38.3%	34,232	--
1956 ...	2,970	2,615	88.0	1,630	62.3	985	37.7%	36,494	6.6
1957 ...	2,956	2,718	91.9	1,734	63.8	984	36.2%	40,666	11.4
1958 ...	2,864	2,528	88.3	1,801	71.2	727	28.8%	43,391	6.7
1959 ...	2,955	2,485	84.1	1,680	67.6	805	32.4%	47,245	8.9
1960 ...	3,008	2,520	83.8	1,712	67.9	808	32.1%	48,486	2.6
1961 ...	2,952	2,539	86.0	1,666	65.6	873	34.4%	53,107	9.5
1962 ...	2,966	2,499	84.3	1,798	71.9	701	28.1%	58,086	9.4
1963 ...	2,876	2,463	85.6	1,805	73.3	658	26.7%	64,705	11.4
1964 ...	2,871	2,441	85.0	1,805	73.9	636	26.1%	74,814	15.6
1965 ...	2,556	2,293	89.7	1,859	81.1	434	18.9%	82,045	9.7
1966 ...	2,634	2,240	85.0	1,755	78.3	485	21.7%	82,709	0.8
1967 ...	2,615	2,211	84.6	1,797	81.3	414	18.7%	100,262	21.2
1968 ...	2,743	2,214	80.7	1,827	82.5	387	17.5%	110,315	10.0
1969 ...	2,835	2,168	76.5	1,846	85.1	322	14.9%	121,362	10.0
1970 ...	2,859	1,999	69.9	1,734	86.7	265	13.3%	134,959	11.2
1971 ...	2,729	1,940	71.1	1,748	90.1	192	9.9%	144,708	7.2
1972 ...	2,690	1,815	67.5	1,650	90.9	165	9.1%	140,126	-3.2
1973 ...	2,289	1,619	70.7	1,508	93.1	111	6.9%	146,097	4.3
1974 ...	2,112	1,434	67.9	1,359	94.8	75	5.2%	151,066	3.4
1975 ...	3,085	1,908	61.8	1,760	92.2	148	7.8%	154,580	2.3
1976 ...	3,065	2,261	73.8	2,093	92.6	168	7.4%	179,344	16.0
1977 ...	3,016	2,524	83.7	2,294	90.9	230	9.1%	203,068	13.2
1978 ...	3,053	2,738	89.7	2,475	90.4	263	9.6%	235,509	16.0
1979 ...	3,127	2,752	88.0	2,504	91.0	248	9.0%	263,938	12.1
1980 ...	3,186	2,950	92.6	2,651	89.9	299	10.1%	286,343	8.5
1981 ...	3,205	3,030	94.5	2,734	90.2	296	9.8%	311,882	8.9
1982 ...	2,862	2,693	94.1	2,454	91.1	239	8.9%	326,299	4.6
1983 ...	2,849	2,795	98.1	2,529	90.5	266	9.5%	336,985	3.3
1984 ...	2,844	2,766	97.3	2,498	90.3	268	9.7%	338,894	0.6
1985 ...	2,833	2,766	97.6	2,492	90.1	274	9.9%	342,113	0.9
1986 ...	2,902	2,803	96.6	2,507	89.4	296	10.6%	343,777	0.5
1987 ...	2,896	2,849	98.4	2,518	88.4	331	11.6%	349,609	1.7
1988 ...	2,893	2,878	99.5	2,552	88.7	326	11.3%	356,187	1.9
1989 ...	2,904	2,819	97.1	2,521	89.4	298	10.6%	366,354	2.9
1990 ...	2,891	2,840	98.2	2,546	89.6	294	10.4%	386,851	5.6
1991 ...	2,879	2,784	96.7	2,543	91.3	241	8.7%	407,529	5.3

SOURCE: Institute of International Education, Open Doors

Table A-2. Total enrollment in all U.S. institutions of higher education, by level and citizenship: 1976-91

Academic year ending in --	Total	Undergraduate enrollment	Graduate enrollment	First-professional enrollment
All students:				
1976	11,290,719	9,623,484	1,423,277	243,958
1977	11,221,626	9,717,211	1,258,302	246,113
1978	11,415,020	9,898,039	1,264,082	252,899
1979	11,391,950	9,867,493	1,265,961	258,496
1980	11,707,126	10,181,040	1,261,093	264,993
1981	12,234,644	10,661,150	1,293,697	279,797
1982	12,517,753	10,891,663	1,349,572	276,518
1983	12,588,520	10,978,407	1,329,644	280,469
1984	12,633,930	11,005,261	1,347,973	280,696
1985	12,400,392	10,766,018	1,353,554	280,820
1986	12,411,945	10,749,752	1,384,862	277,331
1987	12,670,121	10,952,167	1,444,369	273,585
1988	12,925,116	11,193,098	1,461,239	270,779
1989	13,206,559	11,454,955	1,481,459	270,145
1990	13,864,470	12,043,719	1,540,508	280,243
1991	14,113,279	12,303,393	1,531,381	278,505
U. S. citizens:				
1976	11,111,375	9,527,704	1,339,957	243,714
1977	11,018,558	9,609,491	1,180,962	228,105
1978	11,179,511	9,765,279	1,176,812	237,420
1979	11,128,012	9,718,463	1,166,601	242,948
1980	11,420,783	10,008,520	1,169,683	242,580
1981	11,922,762	10,473,490	1,197,617	251,655
1982	12,191,454	10,696,513	1,245,712	249,229
1983	12,251,535	10,775,647	1,221,924	253,964
1984	12,295,036	10,807,781	1,232,973	254,282
1985	12,058,279	10,568,378	1,234,574	255,327
1986	12,068,168	10,562,092	1,255,722	250,354
1987	12,320,512	10,770,937	1,301,679	247,896
1988	12,568,929	11,016,438	1,307,979	244,512
1989	12,840,205	11,282,485	1,319,599	238,121
1990	13,477,619	11,859,129	1,374,078	244,412
1991	13,705,750	12,113,493	1,353,421	238,836
Non-U.S. citizens:				
1976	179,344	95,780	83,320	244
1977	203,068	107,720	77,340	18,008
1978	235,509	132,760	87,270	15,479
1979	263,938	149,030	99,360	15,548
1980	286,343	172,520	91,410	22,413
1981	311,882	187,660	96,080	28,142
1982	326,299	195,150	103,860	27,289
1983	336,985	202,760	107,720	26,505
1984	338,894	197,480	115,000	26,414
1985	342,113	197,640	118,980	25,493
1986	343,777	187,660	129,140	26,977
1987	349,609	181,230	142,690	25,689
1988	356,187	176,660	153,260	26,267
1989	366,354	172,470	161,860	32,024
1990	386,851	184,590	166,430	35,831
1991	407,529	189,900	177,960	39,669

See explanatory notes, if any, and SOURCE(S) at end of table.

Table A-2. Total enrollment in all U.S. institutions of higher education, by level and citizenship: 1976-91

Academic year ending in --	Total	Undergraduate enrollment	Graduate enrollment	First-professional enrollment
All students:				
1976	100.0	85.2	12.6	2.2
1977	100.0	86.6	11.2	2.2
1978	100.0	86.7	11.1	2.2
1979	100.0	86.6	11.1	2.3
1980	100.0	87.0	10.8	2.3
1981	100.0	87.1	10.6	2.3
1982	100.0	87.0	10.8	2.2
1983	100.0	87.2	10.6	2.2
1984	100.0	87.1	10.7	2.2
1985	100.0	86.8	10.9	2.3
1986	100.0	86.6	11.2	2.2
1987	100.0	86.4	11.4	2.2
1988	100.0	86.6	11.3	2.1
1989	100.0	86.7	11.2	2.0
1990	100.0	86.9	11.1	2.0
1991	100.0	87.2	10.9	2.0
U. S. citizens:				
1976	98.4	99.0	94.1	99.9
1977	98.2	98.9	93.9	92.7
1978	97.9	98.7	93.1	93.9
1979	97.7	98.5	92.2	94.0
1980	97.6	98.3	92.8	91.5
1981	97.5	98.2	92.6	89.9
1982	97.4	98.2	92.3	90.1
1983	97.3	98.2	91.9	90.5
1984	97.3	98.2	91.5	90.6
1985	97.2	98.2	91.2	90.9
1986	97.2	98.3	90.7	90.3
1987	97.2	98.3	90.1	90.6
1988	97.2	98.4	89.5	90.3
1989	97.2	98.5	89.1	88.1
1990	97.2	98.5	89.2	87.2
1991	97.1	98.5	88.4	85.8
Non-U.S. citizens:				
1976	1.6	1.0	5.9	0.1
1977	1.8	1.1	6.1	7.3
1978	2.1	1.3	6.9	6.1
1979	2.3	1.5	7.8	6.0
1980	2.4	1.7	7.2	8.5
1981	2.5	1.8	7.4	10.1
1982	2.6	1.8	7.7	9.9
1983	2.7	1.8	8.1	9.5
1984	2.7	1.8	8.5	9.4
1985	2.8	1.8	8.8	9.1
1986	2.8	1.7	9.3	9.7
1987	2.8	1.7	9.9	9.4
1988	2.8	1.6	10.5	9.7
1989	2.8	1.5	10.9	11.9
1990	2.8	1.5	10.8	12.8
1991	2.9	1.5	11.6	14.2

SOURCES: Department of Education/NCES, Fall Enrollment Survey; and IIE, Open Doors

Table A-3. Number of foreign students enrolled in all U.S. institutions of higher education, by continent of origin: 1955-91

Page 1 of 2

Academic year ending in --	Total	Africa	Asia	Europe	North America	Oceania	South America	Stateless or country unknown
Number								
1955 ...	34,232	1,234	14,254	5,205	9,249	337	3,911	42
1956 ...	36,494	1,231	15,864	5,504	9,606	353	3,910	26
1957 ...	40,666	1,424	18,192	6,005	10,633	424	3,921	67
1958 ...	43,391	1,515	19,901	6,837	10,775	495	3,791	77
1959 ...	47,245	1,735	22,442	6,606	11,748	612	4,013	89
1960 ...	48,486	1,959	24,285	6,392	11,277	568	3,912	93
1961 ...	53,107	2,831	27,084	6,702	11,676	658	4,078	78
1962 ...	58,086	3,930	29,845	6,870	12,274	796	4,280	91
1963 ...	64,705	4,996	32,615	7,958	13,431	948	4,679	78
1964 ...	74,814	6,144	36,662	9,348	16,072	1,080	5,358	150
1965 ...	82,045	6,855	40,617	10,108	16,821	1,265	6,174	205
1966 ...	82,709	6,896	40,266	10,226	17,177	1,325	6,672	147
1967 ...	100,262	7,170	46,400	14,207	22,494	1,635	7,918	438
1968 ...	110,315	6,901	50,575	15,556	25,298	1,683	8,844	1,458
1969 ...	121,362	6,979	56,550	16,453	27,027	1,869	9,356	3,128
1970 ...	134,959	7,607	64,311	18,524	27,753	2,077	10,653	4,034
1971 ...	144,708	8,734	71,299	18,306	30,966	1,995	11,066	2,342
1972 ...	140,126	9,592	68,927	16,219	27,764	2,131	10,660	4,833
1973 ...	146,097	11,465	72,764	16,296	27,468	2,107	10,720	5,277
1974 ...	151,066	12,937	75,453	15,539	28,043	2,375	11,116	5,603
1975 ...	154,580	18,400	82,370	13,740	22,410	2,650	12,490	2,520
1976 ...	179,344	25,290	97,130	14,400	24,620	2,740	14,920	244
1977 ...	203,068	25,860	108,510	16,700	31,970	3,150	16,690	188
1978 ...	235,509	29,560	130,970	19,310	32,660	3,810	19,100	99
1979 ...	263,938	33,990	147,280	21,690	35,860	4,150	20,780	188
1980 ...	286,343	36,180	165,430	22,570	34,920	4,140	22,930	173
1981 ...	311,882	38,180	179,350	25,330	38,410	4,180	26,190	242
1982 ...	326,299	41,660	180,550	28,990	41,580	4,000	29,240	279
1983 ...	336,985	42,690	186,930	31,570	39,700	4,040	31,680	375
1984 ...	338,894	41,690	192,930	31,860	39,240	4,090	28,780	304
1985 ...	342,113	39,520	200,260	33,350	39,520	4,190	25,000	273
1986 ...	343,777	34,190	209,550	34,310	39,870	4,030	21,640	187
1987 ...	349,609	31,580	217,700	36,140	40,620	4,230	19,160	179
1988 ...	356,187	28,450	224,170	38,820	42,500	3,620	18,420	207
1989 ...	366,354	26,430	231,630	42,770	43,540	3,610	18,220	154
1990 ...	386,851	24,570	245,440	46,040	47,710	4,010	18,970	111
1991 ...	407,529	23,800	263,250	49,640	47,510	4,230	19,020	79

See explanatory notes, if any, and SOURCE(S) at end of table.

Table A-3. Number of foreign students enrolled in all U.S. institutions by continent of origin: 1955-91

Academic year ending in --	Total	Africa	Asia	Europe	North America	Oceania	South America	Stateless or country unknown
				Percent distribution				
1955 ...	100.0	3.6	41.6	15.2	27.0	1.0	11.4	0.1
1956 ...	100.0	3.4	43.5	15.1	26.3	1.0	10.7	0.1
1957 ...	100.0	3.5	44.7	14.8	26.1	1.0	9.6	0.2
1958 ...	100.0	3.5	45.9	15.8	24.8	1.1	8.7	0.2
1959 ...	100.0	3.7	47.5	14.0	24.9	1.3	8.5	0.2
1960 ...	100.0	4.0	50.1	13.2	23.3	1.2	8.1	0.2
1961 ...	100.0	5.3	51.0	12.6	22.0	1.2	7.7	0.1
1962 ...	100.0	6.8	51.4	11.8	21.1	1.4	7.4	0.2
1963 ...	100.0	7.7	50.4	12.3	20.8	1.5	7.2	0.1
1964 ...	100.0	8.2	49.0	12.5	21.5	1.4	7.2	0.2
1965 ...	100.0	8.4	49.5	12.3	20.5	1.5	7.5	0.2
1966 ...	100.0	8.3	48.7	12.4	20.8	1.6	8.1	0.2
1967 ...	100.0	7.2	46.3	14.2	22.4	1.6	7.9	0.4
1968 ...	100.0	6.3	45.8	14.1	22.9	1.5	8.0	1.3
1969 ...	100.0	5.8	46.6	13.6	22.3	1.5	7.7	2.6
1970 ...	100.0	5.6	47.7	13.7	20.6	1.5	7.9	3.0
1971 ...	100.0	6.0	49.3	12.7	21.4	1.4	7.6	1.6
1972 ...	100.0	6.8	49.2	11.6	19.8	1.5	7.6	3.4
1973 ...	100.0	7.8	49.8	11.2	18.8	1.4	7.3	3.6
1974 ...	100.0	8.6	49.9	10.3	18.6	1.6	7.4	3.7
1975 ...	100.0	11.9	53.3	8.9	14.5	1.7	8.1	1.6
1976 ...	100.0	14.1	54.2	8.0	13.7	1.5	8.3	0.1
1977 ...	100.0	12.7	53.4	8.2	15.7	1.6	8.2	0.1
1978 ...	100.0	12.6	55.6	8.2	13.9	1.6	8.1	0.0
1979 ...	100.0	12.9	55.8	8.2	13.6	1.6	7.9	0.1
1980 ...	100.0	12.6	57.8	7.9	12.2	1.4	8.0	0.1
1981 ...	100.0	12.2	57.5	8.1	12.3	1.3	8.4	0.1
1982 ...	100.0	12.8	55.3	8.9	12.7	1.2	9.0	0.1
1983 ...	100.0	12.7	55.5	9.4	11.8	1.2	9.4	0.1
1984 ...	100.0	12.3	56.9	9.4	11.6	1.2	8.5	0.1
1985 ...	100.0	11.6	58.5	9.7	11.6	1.2	7.3	0.1
1986 ...	100.0	9.9	61.0	10.0	11.6	1.2	6.3	0.1
1987 ...	100.0	9.0	62.3	10.3	11.6	1.2	5.5	0.1
1988 ...	100.0	8.0	62.9	10.9	11.9	1.0	5.2	0.1
1989 ...	100.0	7.2	63.2	11.7	11.9	1.0	5.0	0.0
1990 ...	100.0	6.4	63.4	11.9	12.3	1.0	4.9	0.0
1991 ...	100.0	5.8	64.6	12.2	11.7	1.0	4.7	0.0

SOURCE: Institute of International Education, Open Doors

Table A-4. Number of foreign students enrolled in all U.S. institutions of higher education, by home country: 1984-91

Page 1 of 4

Country name	1984	1985	1986	1987	1988	1989	1990	1991
World, total	338,894	342,113	343,777	349,609	356,187	366,354	386,851	407,529
Africa	41,690	39,520	34,190	31,580	28,450	26,430	24,570	23,800
1 Algeria	780	780	780	720	700	580	480	400
2 Angola	18	15	27	28	14	17	34	32
3 Benin (Dahomey)	14	19	15	20	23	26	27	29
4 Botswana	220	220	220	200	270	230	230	240
5 Burkina Faso (Upper Volta)	46	37	27	32	30	36	39	46
6 Burundi	23	32	36	35	41	45	54	60
7 Cameroon	970	970	1,130	1,330	1,400	1,410	1,240	1,020
8 Canary Islands	0	1	0	1	1	2	2	0
9 Cape Verde	48	52	83	85	38	49	107	95
10 Central African Republic	12	15	14	9	21	14	22	12
11 Chad	25	30	23	31	31	17	15	32
12 Comoros	1	1	3	8	4	10	14	17
13 Congo	9	6	11	16	20	22	39	39
14 Djibouti	7	16	15	15	17	14	19	18
15 Egypt	2,340	2,410	2,270	2,100	2,090	1,850	1,700	1,780
16 Equatorial Guinea	7	7	8	13	16	9	16	12
17 Ethiopia	2,080	2,120	1,940	1,960	1,870	1,920	2,020	2,000
18 Gabon	34	42	30	36	38	33	22	37
19 Gambia	180	190	190	200	152	200	220	240
20 Ghana	1,510	1,370	1,230	1,150	1,110	1,060	1,030	1,100
21 Guinea	31	54	48	45	57	50	45	56
22 Guinea-Bissau	23	21	17	19	32	25	11	15
23 Ivory Coast	370	300	270	250	280	340	350	340
24 Kenya	1,980	1,890	1,720	1,760	1,990	2,130	2,200	2,360
25 Lesotho	94	79	93	93	76	91	115	76
26 Liberia	1,090	1,060	1,020	760	730	720	610	520
27 Libya	1,710	1,200	760	530	400	290	210	119
28 Madagascar	34	44	49	48	54	74	70	76
29 Malawi	113	112	290	142	151	250	300	220
30 Mali	72	81	90	103	113	112	117	135
31 Mauritania	17	23	49	41	45	62	43	47
32 Mauritius	103	97	108	96	102	114	152	157
33 Morocco	700	770	790	840	880	1,020	1,140	1,070
34 Mozambique	8	8	3	10	12	24	27	45
35 Namibia (Southwest Africa)	54	86	74	104	105	136	152	160
36 Niger	43	38	52	66	57	43	49	54
37 Nigeria	20,080	18,370	13,710	11,700	8,340	6,150	4,480	3,710
38 Reunion	0	0	0	0	0	1	1	1
39 Rwanda	23	26	24	40	54	60	89	101
40 Saint Helena	1	0	0	0	2	0	0	2
41 Saint Thomas & Prince	1	9	6	7	12	12	16	13
42 Senegal	130	180	180	180	145	210	240	250
43 Seychelles	10	8	7	13	23	23	21	25
44 Sierra Leone	590	530	450	430	420	400	400	380
45 Somalia	660	710	690	630	510	560	420	420
46 South Africa	1,580	1,610	1,790	1,960	2,130	2,180	2,050	2,170
47 Sudan	730	690	620	530	540	570	540	560
48 Swaziland	121	109	132	134	149	137	157	141
49 Tanzania	540	560	520	510	540	510	560	550
50 Togo	39	45	55	60	50	66	99	76
51 Tunisia	580	640	760	750	760	720	660	590
52 Uganda	450	430	400	380	420	430	470	530
53 Western Sahara	0	0	2	2	0	0	0	7
54 Zaire	230	230	280	290	300	330	380	430
55 Zambia	410	450	440	420	380	370	380	410
56 Zimbabwe	550	510	450	480	470	470	480	550
57 Africa, unspecified	199	217	189	168	235	206	206	225
Asia	192,930	200,260	209,550	217,700	224,170	231,630	245,440	263,250
58 Afghanistan	141	138	127	93	87	100	220	230
59 Bahrain	390	430	430	350	350	360	310	310
60 Bangladesh	2,150	2,010	1,930	1,930	2,170	2,150	2,470	2,530
61 Bhutan	12	8	12	14	30	33	29	28

See explanatory notes, if any, and SOURCE(S) at end of table.

Table A-4. Number of foreign students enrolled in all U.S. institutions of higher education, by home country: 1984-91

Country name	1984	1985	1986	1987	1988	1989	1990	1991
62 Brunei	30	36	29	21	30	20	15	18
63 Cambodia	440	270	400	520	240	190	145	144
64 China, People's Republic	8,140	10,100	13,980	20,030	25,170	29,040	33,390	39,600
65 China, Republic of (Taiwan)	21,960	22,590	23,770	25,660	26,660	28,760	30,960	33,530
66 Cyprus	1,890	2,200	2,140	2,010	1,890	1,710	1,750	1,710
67 Hong Kong	9,420	10,130	10,710	11,010	10,650	10,560	11,230	12,630
68 India	13,730	14,620	16,070	18,350	21,010	23,350	26,240	28,860
69 Indonesia	6,110	7,190	8,210	9,240	9,010	8,720	9,390	9,520
70 Iran	20,360	16,640	14,210	12,230	10,420	8,950	7,440	6,260
71 Iraq	1,730	1,550	1,340	1,130	990	800	770	540
72 Israel	2,610	2,480	2,600	2,630	2,690	2,680	2,910	2,980
73 Japan	13,010	13,160	13,360	15,070	18,050	24,000	29,840	36,610
74 Jordan	6,890	6,750	6,590	5,650	5,140	4,940	5,250	4,320
75 Korea, Democratic People's Rep.	18	71	93	49	35	28	31	45
76 Korea, Republic of	13,860	16,430	18,660	19,940	20,520	20,610	21,710	23,360
77 Kuwait	3,810	3,980	3,810	3,250	3,160	2,730	2,280	1,620
78 Laos	890	460	400	520	320	300	460	470
79 Lebanon	6,680	6,940	7,090	6,450	5,820	5,130	4,450	3,900
80 Macau	85	102	114	113	105	122	140	240
81 Malaysia	18,150	21,720	23,020	21,640	19,480	16,170	14,110	13,610
82 Maldives	2	3	6	10	7	3	3	5
83 Mongolia	4	0	1	1	0	0	2	4
84 Myanmar (Burma)	144	190	200	220	230	270	340	410
85 Nepal	310	320	390	440	480	600	610	670
86 Oman	360	400	560	680	720	680	620	490
87 Pakistan	4,280	4,750	5,440	5,950	6,570	7,050	7,070	7,730
88 Philippines	3,500	3,660	3,920	4,250	4,420	4,540	4,540	4,270
89 Qatar	780	810	720	590	620	510	480	440
90 Saudi Arabia	8,630	7,760	6,900	5,840	5,490	4,970	4,110	3,590
91 Sikkim	2	0	0	0	0	0	0	0
92 Singapore	3,230	3,750	3,930	4,530	4,870	4,460	4,440	4,500
93 Sri Lanka	1,240	1,480	1,800	1,890	2,030	2,060	2,210	2,320
94 Syria	1,940	2,180	2,140	1,890	1,740	1,710	1,500	1,280
95 Thailand	6,940	7,220	6,940	6,480	6,430	6,560	6,630	7,090
96 Tibet	1	1	0	0	0	0	0	0
97 Turkey	2,830	2,640	2,460	2,490	2,630	3,010	3,400	4,080
98 United Arab Emirates	1,260	1,270	1,150	1,270	1,380	1,460	1,450	1,350
99 Viet Nam	4,360	3,220	3,270	2,700	1,890	1,560	1,850	1,400
100 Yemen Arab Republic	480	530	540	520	560	540	610	550
101 Yemen, People's Dem. Republic	11	14	34	38	27	25	14	0
102 Asia, unspecified	120	57	54	11	49	169	21	6
Europe	31,860	33,350	34,310	36,140	38,820	42,770	46,040	49,640
103 Albania	1	1	0	3	2	1	1	7
104 Andorra	0	2	2	4	3	5	6	2
105 Austria	320	370	400	420	480	520	580	660
106 Belgium	700	740	740	770	880	930	920	940
107 Bulgaria	19	14	25	24	40	44	75	172
108 Czechoslovakia	51	59	80	79	64	64	87	158
109 Denmark	450	450	550	600	670	760	820	840
110 Finland	550	550	560	600	660	690	740	890
111 France	3,180	3,390	3,680	3,910	4,310	4,880	5,340	5,630
112 German Democratic Republic	21	31	79	17	19	25	22	0
113 Germany, Federal Republic of	3,790	4,190	4,730	5,090	5,730	6,340	6,750	7,000
114 Gibraltar	1	2	0	0	0	1	0	2
115 Greece	5,030	4,870	4,440	4,240	4,140	4,360	4,430	4,360
116 Hungary	190	90	141	180	190	260	440	510
117 Iceland	430	550	570	630	640	670	820	760
118 Ireland	850	910	1,030	1,070	1,170	1,400	1,380	1,240
119 Italy	1,760	1,750	1,890	2,000	2,200	2,370	2,370	2,390
120 Jugoslavia	440	490	530	610	750	900	1,070	1,200
121 Liechtenstein	4	1	3	6	4	4	3	6
122 Luxemburg	34	30	39	24	29	30	41	44
123 Malta	22	30	33	38	36	27	45	39
124 Monaco	3	6	9	9	8	10	9	14
125 Netherlands	1,390	1,500	1,410	1,490	1,630	1,760	1,840	2,030
126 Norway	1,570	1,800	1,820	1,920	1,880	2,110	2,160	2,350

See explanatory notes, if any, and SOURCE(S) at end of table.

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Table A-4. Number of foreign students enrolled in all U.S. institutions of higher education, by home country: 1984-91

Country name	1984	1985	1986	1987	1988	1989	1990	1991
127 Poland	730	650	700	770	740	860	1,010	1,240
128 Portugal	540	650	550	630	610	670	690	680
129 Romania	73	74	60	63	72	85	120	250
130 San Marino	3	2	0	0	2	0	4	1
131 Spain	1,350	1,520	1,740	2,050	2,500	3,050	3,640	4,300
132 Sweden	1,290	1,360	1,400	1,510	1,600	1,710	1,740	2,030
133 Switzerland	920	950	990	1,020	1,040	1,210	1,240	1,340
134 Union of Soviet Socialist Rep's	260	230	83	97	77	190	510	1,210
135 United Kingdom	5,860	6,030	5,940	6,240	6,600	6,800	7,100	7,300
136 Vatican City	2	1	1	4	1	1	1	1
137 Europe, unspecified	26	57	85	22	43	33	36	44
North America	39,240	39,520	39,870	40,620	42,490	43,540	47,710	47,510
138 Anguilla	3	2	3	6	16	14	25	7
139 Antigua & Barbuda	110	126	104	136	200	210	240	250
140 Aruba	0	0	0	0	0	0	27	25
141 Bahamas	1,480	1,520	1,610	1,530	1,710	1,760	1,640	1,850
142 Barbados	320	350	340	370	440	440	450	470
143 Belize	170	135	230	320	350	290	360	330
144 Bermuda	520	590	620	600	670	700	720	600
145 British Virgin Islands	42	56	71	72	61	120	106	60
146 Canada	15,150	15,370	15,410	15,700	15,690	16,030	17,870	18,350
147 Caribbean, unspecified	210	139	93	100	110	105	120	260
148 Cayman Islands	23	37	34	45	41	47	69	83
149 Central America, unspecified	0	0	1	1	0	0	0	1
150 Costa Rica	610	660	720	790	930	1,010	1,060	1,100
151 Cuba	1,790	1,500	1,420	1,350	1,230	1,030	980	1,080
152 Dominica	29	30	38	25	86	89	82	103
153 Dominican Republic	740	690	730	710	740	890	960	960
154 Grenada	94	91	142	131	151	150	174	210
155 Guadeloupe	4	3	2	4	5	6	10	7
156 Guatemala	740	740	710	700	740	800	1,030	960
157 Haiti	1,300	1,400	1,340	1,420	1,460	1,500	1,490	1,450
158 Honduras	1,210	1,280	1,090	1,200	1,250	1,380	1,470	1,310
159 Jamaica	2,330	2,200	2,110	2,300	2,280	2,420	2,850	2,450
160 Leeward Islands	0	0	3	2	4	4	3	9
161 Martinique	11	9	7	5	5	7	14	7
162 Mexico	5,600	5,750	5,460	5,330	6,170	5,780	6,540	6,740
163 Montserrat	2	5	7	8	11	21	20	18
164 Netherlands Antilles	580	540	610	660	690	680	730	670
165 Nicaragua	1,190	1,150	1,800	1,840	2,100	2,220	2,450	2,290
166 Panama	1,490	1,570	1,590	1,770	1,910	2,080	2,260	2,010
167 Saint Kitts & Nevis	24	39	22	42	79	121	134	139
168 Saint Lucia	46	37	44	50	59	72	83	84
169 Saint Vincent & the Grenadines	40	37	17	36	41	46	68	76
170 Salvador	1,390	1,250	1,140	1,120	1,110	1,280	1,370	1,210
171 Trinidad & Tobago	1,880	2,070	2,250	2,150	2,050	2,100	2,160	2,240
172 Turks & Caicos Islands	12	14	9	10	6	8	24	22
173 Windward Islands	1	0	1	0	0	0	16	3
174 North America, unspecified	99	130	92	87	95	130	105	76
Oceania	4,090	4,190	4,030	4,230	3,620	3,610	4,010	4,230
175 Australia	1,530	1,560	1,530	1,470	1,490	1,580	1,740	1,910
176 Cook Islands	3	6	7	8	3	12	2	17
177 Fiji	91	104	119	130	152	141	158	141
178 French Polynesia	34	29	43	39	48	55	95	81
179 Kiribati	2	1	3	17	17	26	25	35
180 Marshall Islands	0	0	0	0	0	0	10	14
181 Nauru	1	2	1	0	0	0	0	1
182 New Caledonia	7	0	2	3	3	7	7	5
183 New Zealand	510	540	500	550	560	580	610	660
184 Niue	0	0	0	6	0	0	1	7
185 Pacific Islands Trust Terr.	1,580	1,630	1,520	1,710	1,030	870	960	930
186 Palau	0	0	0	0	0	0	71	43
187 Papua New Guinea	17	18	26	24	18	19	16	22
188 Solomon Islands	4	6	3	4	9	4	1	3

See explanatory notes, if any, and SOURCE(S) at end of table.

Table A-4. Number of foreign students enrolled in all U.S. institutions of higher education, by home country: 1984-91

Page 4 of 4

Country name	1984	1985	1986	1987	1988	1989	1990	1991
189 Tonga	109	110	108	106	128	117	116	139
190 Tuvalu	1	0	0	0	0	1	1	2
191 Vanuatu (New Hebrides)	1	2	0	0	0	1	1	2
192 Wallis & Futuna Islands	0	0	1	0	0	0	0	0
193 Western Samoa	122	126	102	102	97	122	128	152
194 Oceania, unspecified	78	56	65	61	65	75	68	66
South America	28,780	25,000	21,640	19,160	18,420	18,220	18,970	19,020
195 Argentina	1,320	1,240	1,320	1,470	1,650	1,750	1,810	1,910
196 Bolivia	1,090	1,040	1,000	950	980	940	1,060	960
197 Brazil	2,820	2,790	2,840	2,760	2,950	3,300	3,730	3,900
198 Chile	1,270	1,190	1,160	1,090	1,110	1,140	1,100	1,100
199 Colombia	4,600	4,060	4,010	3,740	3,370	3,390	3,320	3,180
200 Ecuador	1,130	1,120	1,080	1,050	1,110	1,110	1,170	1,130
201 Falkland Islands	4	0	1	0	1	0	0	5
202 French Guiana	2	2	14	1	5	3	3	3
203 Guyana	610	630	480	520	500	470	510	450
204 Paraguay	125	133	135	147	190	230	230	240
205 Peru	1,920	2,070	2,050	2,080	2,290	2,370	2,750	2,800
206 Suriname	180	200	220	220	230	210	230	181
207 Uruguay	230	220	280	230	260	280	280	250
208 Venezuela	13,440	10,290	7,040	4,870	3,790	3,040	2,740	2,890
209 South America, unspecified	39	15	10	32	0	0	37	21
Stateless or country unknown	304	273	187	179	217	154	111	79

SOURCE: Institute of International Education, Open Doors

Table A-5. Number of foreign students enrolled in all U.S. institutions of higher education, by field of study: selected years, 1955-91

Field	1955	1970	1980	1985	1986	1987	1988	1989	1990	1991
Total, all fields	34,232	134,959	286,343	342,113	343,777	349,609	356,187	366,534	386,851	407,529
Science fields	10,357	42,345	68,550	94,130	94,850	95,620	100,230	103,390	106,010	111,010
Agriculture	1,199	3,667	8,750	7,540	7,400	7,200	7,930	8,370	8,310	8,080
Physical and life sciences	3,681	17,006	21,880	25,960	26,830	27,370	29,250	31,320	32,910	35,280
Mathematics and computer sciences	436	4,400	15,390	35,630	35,910	35,440	35,400	35,400	36,210	36,840
Social sciences	5,041	17,272	22,530	25,000	24,710	25,610	27,650	28,300	28,580	30,810
Engineering	7,618	29,731	76,950	75,370	74,580	74,290	73,880	72,710	73,420	73,620
Health sciences	3,184	5,969	10,950	13,410	13,880	14,350	13,910	15,230	15,350	16,560
Other fields	13,073	56,914	129,893	159,203	160,467	165,349	168,167	175,204	192,071	206,339
Business and management	2,953	15,587	46,960	64,930	64,790	66,140	66,990	69,320	75,570	79,620
Education	1,457	7,779	12,340	12,140	11,860	12,130	11,140	11,210	11,210	12,280
Fine and applied arts	1,997	6,297	14,350	15,900	15,400	14,820	15,860	16,740	17,450	19,040
Humanities	5,502	20,211	11,340	13,030	11,910	13,200	14,250	14,050	15,230	15,840
Other fields	1,164	597	12,603	22,253	23,537	25,849	25,107	28,224	31,881	34,979
Intensive English language	---	---	12,170	11,010	12,870	13,530	14,030	16,020	19,120	19,300
Undeclared	---	6,443	20,130	19,940	20,100	19,680	20,790	19,640	21,610	25,280

SOURCE: Institute of International Education, Open Doors

Table A-6. Number of foreign students enrolled in all U.S. institutions of higher education, by primary source of support: 1986-91

Primary source of support	1986	1987	1988	1989	1990	1991
Total	343,777	349,609	356,187	366,354	386,851	407,529
Personal and family	230,640	224,950	228,030	229,430	246,250	262,040
U.S. college or university	42,800	52,880	60,420	64,410	70,310	76,450
Home government/university	38,310	35,030	30,720	28,360	25,910	23,570
U.S. private sponsor	7,590	9,340	9,840	11,140	11,750	14,060
Current employment	6,980	5,500	5,380	7,300	8,260	9,510
Foreign private sponsor	7,870	9,980	8,620	8,500	8,550	9,190
U.S. Government	6,870	8,650	7,570	8,660	8,700	7,860
Other	2,717	3,279	5,607	8,554	7,121	4,849
Percent distribution	100.0	100.0	100.0	100.0	100.0	100.0
Personal and family	67.1	64.3	64.0	62.6	63.7	64.3
U.S. college or university	12.4	15.1	17.0	17.6	18.2	18.8
Home government/university	11.1	10.0	8.6	7.7	6.7	5.8
U.S. private sponsor	2.2	2.7	2.8	3.0	3.0	3.5
Current employment	2.0	1.6	1.5	2.0	2.1	2.3
Foreign private sponsor	2.3	2.9	2.4	2.3	2.2	2.3
U.S. Government	2.0	2.5	2.1	2.4	2.2	1.9
Other	0.8	0.9	1.6	2.3	1.8	1.2

SOURCE: Institute of International Education, Open Doors

Table A-7. Number of foreign students enrolled in all U.S. institutions of higher education, by geographic distribution: 1982-91

Geographic distribution	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Total, foreign students	326,299	336,985	338,894	342,113	343,777	349,609	356,187	366,354	386,851	407,529
New England	21,666	22,465	23,191	23,488	24,951	26,221	27,702	29,178	30,704	32,399
Connecticut	3,667	3,429	3,695	3,881	3,906	3,937	4,010	4,363	4,636	4,979
Maine	388	409	382	383	377	452	615	713	902	1,047
Massachusetts	15,446	16,075	16,428	16,357	17,652	18,227	18,946	19,808	20,840	22,320
New Hampshire	500	614	857	948	934	1,186	1,288	1,270	1,262	1,323
Rhode Island	892	1,177	1,263	1,363	1,468	1,709	1,711	1,739	1,858	1,883
Vermont	773	761	566	556	614	710	1,132	1,285	1,206	847
Middle Atlantic	44,727	46,209	47,396	49,215	49,901	53,385	56,550	61,606	63,761	68,018
New Jersey	5,699	6,115	6,210	6,565	7,045	8,363	8,397	9,136	9,608	9,889
New York	28,222	29,073	29,546	31,064	31,360	32,821	34,693	37,802	38,350	40,558
Pennsylvania	10,806	11,021	11,640	11,586	11,496	12,201	13,460	14,668	15,803	17,571
East North Central	48,455	51,195	51,145	50,948	50,579	52,471	53,671	54,912	58,240	61,877
Illinois	13,417	13,781	14,246	13,935	13,319	14,505	15,619	15,768	16,816	17,771
Indiana	6,374	6,476	6,862	7,089	7,133	7,135	7,088	7,239	7,575	8,061
Michigan	12,483	12,771	12,410	12,175	12,094	12,219	12,171	12,857	13,555	14,366
Ohio	10,806	12,001	12,047	12,026	12,357	12,834	13,142	13,289	13,856	14,798
Wisconsin	5,375	6,166	5,580	5,723	5,676	5,778	5,651	5,759	6,438	6,881
West North Central	22,747	24,096	24,578	24,496	25,098	25,817	25,916	26,486	28,827	31,005
Iowa	4,654	4,895	5,161	5,527	5,858	6,001	5,855	5,971	6,735	7,079
Kansas	5,066	5,208	4,850	4,777	4,587	4,996	5,154	5,420	6,009	6,335
Minnesota	4,573	4,926	4,996	5,043	5,124	5,157	5,089	5,122	5,446	5,882
Missouri	5,422	5,798	6,009	5,719	5,805	5,976	6,223	6,397	6,620	7,349
Nebraska	1,611	1,951	2,123	1,986	2,018	1,929	1,801	1,695	1,918	2,232
North Dakota	787	630	688	683	936	1,009	1,090	1,163	1,341	1,352
South Dakota	634	688	751	761	770	749	704	718	758	776
South Atlantic	49,260	52,308	52,674	53,303	55,161	55,376	56,020	57,117	60,318	63,331
Delaware	578	731	633	732	791	703	855	893	1,003	1,067
District of Columbia	9,688	10,536	10,596	9,798	9,832	9,722	9,298	9,212	9,487	9,709
Florida	17,011	17,394	17,918	17,658	17,948	18,185	18,271	18,487	20,364	20,700
Georgia	5,132	5,496	5,442	5,356	5,755	5,643	6,131	5,861	5,980	6,319
Maryland	5,095	5,354	5,224	6,113	6,276	6,230	6,386	7,118	6,952	7,865
North Carolina	4,980	5,397	5,492	5,617	5,525	5,669	5,407	5,479	5,764	5,911
South Carolina	1,701	1,909	1,846	1,985	2,005	2,030	2,088	2,127	2,381	2,620
Virginia	3,478	3,855	3,999	4,607	5,780	5,983	6,364	6,593	6,970	7,487
West Virginia	1,597	1,636	1,524	1,437	1,249	1,211	1,220	1,347	1,417	1,653
East South Central	11,654	11,657	12,402	11,979	11,381	11,524	11,871	13,029	13,244	13,922
Alabama	3,543	3,903	4,345	4,027	3,817	3,997	4,130	4,149	4,513	4,806
Kentucky	2,307	2,074	1,934	1,842	1,719	1,739	2,024	2,312	2,543	2,705
Mississippi	1,509	1,564	1,889	1,873	1,690	1,697	1,639	2,536	1,941	2,094
Tennessee	4,295	4,116	4,234	4,237	4,155	4,091	4,078	4,032	4,247	4,317
West South Central	41,792	46,059	47,499	47,943	45,229	41,940	38,319	37,094	37,404	39,250
Arkansas	1,331	1,640	1,800	1,789	1,912	1,846	1,818	1,771	1,710	1,708
Louisiana	7,162	8,931	8,883	8,963	8,923	7,836	6,114	5,729	5,535	5,040
Oklahoma	8,902	8,911	8,547	7,762	7,519	7,133	6,673	6,354	5,989	6,297
Texas	24,397	26,577	28,269	29,429	26,875	25,125	23,714	23,240	24,170	26,205
Mountain	17,232	16,971	16,720	17,486	17,674	18,315	19,635	19,326	20,935	22,123
Arizona	4,299	4,242	4,438	4,998	5,631	6,008	6,560	6,567	6,763	6,824
Colorado	4,969	4,820	4,662	4,386	4,099	4,184	4,439	4,275	4,681	5,287
Idaho	950	907	905	954	883	889	966	1,098	1,150	1,225
Montana	639	750	786	765	738	650	643	692	770	774
Nevada	477	448	496	518	512	589	609	695	783	964
New Mexico	1,332	1,318	1,463	1,510	1,553	1,600	1,513	1,392	1,399	1,460
Utah	4,169	4,052	3,572	3,943	3,837	3,934	4,417	4,136	4,862	5,040
Wyoming	397	434	398	412	421	461	488	471	527	549
Pacific	66,772	64,651	61,645	61,785	62,184	62,839	65,256	66,255	71,993	74,128
Alaska	172	198	203	215	234	264	276	290	364	373
California	51,520	49,715	47,246	47,318	47,586	47,388	49,197	49,291	54,178	55,168
Hawaii	2,984	3,281	3,535	3,402	3,261	3,415	3,648	4,034	4,190	4,770
Oregon	5,069	4,703	4,685	4,943	5,314	5,740	6,147	6,395	6,403	6,192
Washington	7,027	6,754	5,976	5,907	5,789	6,032	5,988	6,245	6,858	7,625
Outlying areas	1,994	1,374	1,644	1,470	1,619	1,721	1,247	1,351	1,425	1,476

SOURCE: Institute of International Education, Open Doors

Table A-8. Number of foreign students enrolled in the leading 100 U.S. institutions of higher education, ranked by total foreign enrollment: 1955 and 1985-91

Page 1 of 2

Institution and rank	1955	1985	1986	1987	1988	1989	1990	1991
Total, all institutions	34,232	342,113	343,777	349,609	356,187	366,354	386,851	407,529
1 Miami-Dade Community College	--	4,316	4,370	5,010	5,148	5,080	5,518	5,757
2 University of Southern California	569	3,761	3,741	3,746	3,767	3,486	3,705	3,886
3 University of Texas, Austin	411	3,286	3,132	3,000	3,135	3,385	3,568	3,867
4 Boston University	216	2,462	2,493	2,422	2,641	2,940	3,248	3,633
5 University of Wisconsin, Madison	477	2,901	2,873	2,789	2,825	2,919	3,295	3,565
6 University of Pennsylvania	200	1,866	2,012	2,125	2,255	2,654	2,778	3,122
7 Columbia University	1,254	2,773	2,679	2,807	2,474	2,673	2,849	3,077
8 Ohio State University, Main Campus	274	2,606	2,690	2,739	2,756	2,790	2,887	3,021
9 University of Illinois, Urbana-Champlain	594	1,763	1,959	2,228	2,446	2,569	2,794	2,967
10 University of California, Los Angeles	299	2,012	2,488	2,506	2,765	2,859	3,126	2,921
Total, 1st 10 institutions	4,294	27,746	28,437	29,372	30,212	31,355	33,768	35,816
11 University of Minnesota, Minneapolis-St. Paul	530	2,344	2,473	2,624	2,514	2,510	2,555	2,636
12 Southern Illinois University, Carbondale	33	2,565	2,299	2,323	2,203	2,148	2,615	2,627
13 Texas A&M University, Main Campus	124	1,624	1,596	1,672	1,717	1,877	2,156	2,497
14 University of Maryland, College Park	114	1,926	2,023	2,082	2,239	2,352	2,397	2,462
15 Harvard University	721	2,056	2,042	2,059	2,014	2,197	2,246	2,409
16 University of Houston	78	2,424	2,434	2,258	2,113	2,130	2,332	2,406
17 Northeastern University	17	1,870	1,888	2,000	2,099	2,028	2,288	2,385
18 George Washington University	158	2,221	2,077	2,163	2,198	2,275	2,207	2,378
19 Purdue University, Main Campus	253	1,497	1,633	1,788	1,950	2,120	2,277	2,317
20 University of Michigan, Ann Arbor	810	2,366	2,413	2,449	2,446	2,465	2,465	2,308
Total, 1st 20 institutions	7,132	48,639	49,315	50,790	51,705	53,457	57,306	60,241
21 Michigan State University	263	1,853	1,985	2,051	2,148	2,201	2,270	2,281
22 New York University	946	2,115	2,098	2,196	2,072	2,026	2,102	2,279
23 Arizona State University	23	1,498	1,645	1,752	1,917	2,005	2,132	2,215
24 University of California, Berkeley	798	1,983	1,987	2,080	2,187	2,100	2,143	2,200
25 SUNY at Buffalo	42	1,793	1,855	2,041	2,113	2,242	2,192	2,195
26 Rutgers University, New Brunswick	25	1,080	1,173	1,326	1,608	1,849	1,988	2,192
27 Cornell University	488	1,602	1,718	1,857	1,878	2,027	2,138	2,178
28 Iowa State University	169	2,008	2,178	2,184	2,044	2,045	2,160	2,171
29 Indiana University, Bloomington	197	2,026	2,048	1,997	1,972	1,990	2,066	2,131
30 California State University, Los Angeles	72	1,968	1,979	1,105	1,303	1,500	2,028	2,123
Total, 1st 30 institutions	10,155	66,565	67,981	69,379	70,947	73,442	78,525	82,206
31 Massachusetts Institute of Technology	602	1,745	1,886	1,837	1,881	1,981	2,049	2,103
32 Pennsylvania State University, University Park	126	1,665	1,531	1,662	1,959	2,064	2,059	2,095
33 University of Florida	191	1,667	1,712	1,589	1,580	1,752	1,880	2,053
34 University of Hawaii, Manoa	61	1,479	1,399	1,341	1,380	1,807	1,850	2,017
35 Stanford University	256	1,755	1,780	2,187	1,976	1,990	2,081	2,000
36 University of Arizona	78	1,954	2,290	2,393	2,599	2,403	2,253	1,997
37 Temple University	28	1,120	1,237	1,358	1,352	1,478	1,614	1,960
38 University of Iowa	145	1,522	1,623	1,826	1,888	1,937	1,888	1,925
39 University of Missouri, Columbia	72	1,394	1,405	1,412	1,470	1,534	1,712	1,873
40 University of Kansas	142	1,634	1,660	1,777	1,747	1,762	1,837	1,870
Total, 1st 40 institutions	11,856	82,500	84,504	86,761	88,779	92,150	97,748	102,099
41 University of Washington	442	1,550	1,652	1,652	1,616	1,743	1,681	1,776
42 University of Illinois, Chicago	1/	1,232	1,254	1,304	1,353	1,427	1,586	1,743
43 Wayne State University	262	1,168	1,117	1,220	1,332	1,386	1,457	1,740
44 University of Massachusetts, Amherst	28	1,226	1,393	1,462	1,559	1,631	1,639	1,701
45 CUNY Baruch College	--	752	833	973	1,387	1,552	1,343	1,681
46 New Jersey Institute of Technology	--	511	832	1,076	1,415	1,746	1,864	1,669
47 University of Miami	203	1,980	1,916	1,873	1,809	1,828	1,756	1,665
48 Oklahoma State University	155	1,976	1,969	1,892	1,789	1,615	1,494	1,664
49 Northern Virginia Community College	--	795	1,774	1,481	1,650	1,650	1,562	1,645
50 Brigham Young University	185	1,387	1,335	1,399	1,732	1,534	1,799	1,621
Total, 1st 50 institutions	13,131	95,077	98,579	101,093	104,421	108,262	113,929	119,004

See explanatory notes, if any, and SOURCE(S) at end of table.

Table A-8. Number of foreign students enrolled in the leading 100 U.S. institutions of higher education, ranked by total foreign enrollment: 1955 and 1985-91

Page 2 of 2

Institution and rank	1955	1985	1986	1987	1988	1989	1990	1991
51 CUNY City College	25	1,422	1,560	1,400	1,593	1,736	1,610	1,598
52 Howard University	221	1,940	1,997	1,993	1,754	1,786	1,614	1,581
53 SUNY at Stony Brook	--	1,119	1,174	1,257	1,356	1,520	1,566	1,577
54 Oregon State University	91	1,275	1,503	1,559	1,603	1,747	1,817	1,534
55 Syracuse University, Main Campus	114	1,177	1,285	1,374	1,452	1,527	1,539	1,510
56 University of Toledo	37	1,302	1,482	1,726	1,756	1,712	1,640	1,494
57 Louisiana State University, Baton Rouge	395	2,109	1,864	1,735	1,524	1,167	1,177	1,483
58 Virginia Polytech. Institute & State University	35	774	926	1,251	1,372	1,351	1,437	1,464
59 San Francisco State University	158	915	983	1,381	1,295	1,135	1,611	1,459
60 University of Pittsburgh, Main Campus	63	1,358	1,349	1,337	1,383	1,397	1,412	1,454
Total, 1st 60 institutions	14,270	108,468	112,702	116,106	119,509	123,340	129,352	134,158
61 University of North Texas	10	2,570	2,398	2,164	1,946	1,536	1,363	1,431
62 American University	282	1,415	1,437	1,404	1,412	1,394	1,382	1,404
63 Santa Monica College	42	616	483	639	800	900	1,079	1,360
64 California State University, Long Beach	7	1,879	1,802	1,726	1,751	1,749	1,750	1,353
65 Ohio University, Main Campus	54	1,394	1,327	1,344	1,367	1,253	1,190	1,345
66 Texas Southern University	--	2,154	1,217	1,142	890	1,042	900	1,313
67 University of Oregon, Main Campus	111	1,391	1,519	1,670	1,777	1,626	1,435	1,278
68 University of Chicago	287	720	772	930	977	1,020	1,047	1,268
69 University of the District of Columbia	--	1,276	1,231	1,181	1,103	1,176	1,196	1,263
70 Western Michigan University	23	1,066	1,035	1,053	1,039	948	1,041	1,259
Total, 1st 70 institutions	15,086	122,949	125,923	129,359	132,571	135,984	141,735	147,432
71 University of Utah	41	899	901	1,044	1,063	1,135	1,201	1,254
72 University of Oklahoma, Norman	206	1,219	1,169	1,197	1,270	1,203	1,137	1,249
73 University of Texas, El Paso	35	1,303	1,174	801	885	955	1,050	1,227
74 University of California, San Diego	5	725	839	869	932	1,161	1,210	1,224
75 University of Georgia	35	1,067	1,104	1,124	1,123	1,155	1,168	1,224
76 University of California, Davis	106	893	878	1,005	1,010	1,069	1,167	1,215
77 University of Nebraska, Lincoln	114	1,057	1,018	1,017	957	908	1,002	1,201
78 Wichita State University	16	927	954	943	857	989	1,134	1,201
79 University of Texas, Arlington	3	1,433	1,428	1,284	1,109	1,128	1,130	1,185
80 University of Cincinnati	38	636	782	803	905	900	1,080	1,179
Total, 1st 80 institutions	15,685	133,108	136,170	139,446	142,682	146,587	153,014	159,591
81 New York Institute of Technology, all campuses	2	869	925	984	1,072	1,197	1,040	1,177
82 Utah State University	75	943	870	860	997	935	1,023	1,167
83 Hawaii Pacific University	--	588	567	785	975	867	951	1,166
84 Kansas State University	95	715	710	832	963	989	1,136	1,162
85 Yale University	282	716	835	875	917	1,023	1,082	1,160
86 Florida International University	--	1,104	1,083	1,036	979	1,007	1,234	1,142
87 Eastern Michigan University	56	1,013	927	1,036	1,090	1,069	1,015	1,117
88 North Carolina State University, Raleigh	136	842	877	1,107	1,049	1,049	1,083	1,109
89 Georgetown University	237	975	1,147	1,221	1,104	1,107	1,066	1,108
90 Montgomery College, Rockville	4	812	694	818	841	911	1,063	1,108
Total, 1st 90 institutions	16,572	141,685	144,805	149,000	152,669	156,741	163,707	171,007
91 Drexel University	25	337	418	482	875	876	1,053	1,105
92 Case Western Reserve University	106	905	846	912	1,055	976	985	1,102
93 Northwestern University	145	770	594	984	961	986	1,063	1,101
94 University of Rochester	74	610	681	812	844	978	1,015	1,076
95 University of Kentucky	40	495	511	482	654	721	895	1,073
96 University of Connecticut	34	516	608	644	650	824	881	1,047
97 San Jose State University	62	840	761	855	910	977	1,043	1,043
98 University of South Carolina, Columbia	9	948	953	966	784	875	926	1,041
99 Tufts University	52	417	489	587	747	737	774	1,034
100 CUNY LaGuardia Community College	--	251	72	250	500	439	864	1,018
Total, 1st 100 institutions	17,119	147,774	150,738	155,974	160,649	165,130	173,206	181,647
All other institutions	17,113	194,339	193,039	193,635	195,538	201,224	213,645	225,882

1/ Data for the University of Illinois at Chicago were included with the Urbana-Champlain campus in 1955.

SOURCE: Institute of International Education, Open Doors

Table A-9. Total and non-U.S. citizen graduate students in the science, engineering, and health fields in all U.S. institutions, and percent non-U.S. citizens, by enrollment status and field: 1984-91

Page 1 of 3

Enrollment status and field	1984	1985 1/	1986 1/	1987 1/	1988 1/	1989	1990	1991
Total, all surveyed fields	393,891	398,011	407,795	419,102	425,150	429,648	439,941	458,943
Sciences, total	257,610	258,383	263,771	267,416	270,988	274,555	281,232	292,270
Physical sciences	29,466	30,064	30,995	32,260	32,738	32,972	33,628	34,337
Earth, atmos., and ocean sciences ..	15,544	15,612	15,545	15,163	14,522	14,032	13,848	14,159
Mathematical sciences	17,397	17,478	17,613	17,990	18,573	19,141	19,382	19,884
Computer sciences	23,616	25,810	29,844	31,425	32,137	32,787	32,846	34,507
Agricultural sciences	12,290	12,062	11,380	11,329	11,004	11,000	11,038	11,183
Biological sciences	46,055	46,171	46,538	47,216	47,452	48,316	49,617	50,921
Psychology	41,039	41,074	41,308	41,551	42,888	44,389	46,304	48,659
Social sciences	72,203	70,112	70,548	70,482	71,674	71,918	74,569	78,620
Engineering, total	91,937	93,644	96,951	103,071	104,644	103,719	104,815	109,299
Chemical engineering	7,563	7,373	7,150	7,012	7,111	6,618	6,460	6,734
Civil engineering	15,299	15,569	15,248	15,357	14,924	15,022	15,128	15,891
Electrical engineering	25,213	26,306	28,128	30,008	31,339	31,960	33,161	33,887
Industrial engineering	9,621	9,820	11,078	12,120	12,690	11,849	11,559	11,816
Mechanical engineering	12,911	13,855	14,157	15,740	16,304	16,233	16,216	16,879
Other engineering	21,330	20,721	21,190	22,834	22,276	22,037	22,291	24,092
Total, health fields	44,344	45,984	47,073	48,615	49,518	51,374	53,894	57,374
Full time, all surveyed fields	253,578	255,430	259,320	268,185	273,090	277,859	285,989	295,836
Sciences, total	176,249	176,654	179,310	183,716	186,485	189,243	194,695	201,074
Physical sciences	25,205	25,852	26,669	27,764	28,414	28,574	29,193	29,573
Earth, atmos., and ocean sciences ..	12,049	11,819	11,439	11,323	10,543	10,296	10,138	10,295
Mathematical sciences	10,964	11,319	11,833	12,398	13,049	13,523	13,705	13,870
Computer sciences	10,687	11,587	14,101	15,310	15,572	15,596	16,008	16,872
Agricultural sciences	9,836	9,750	9,097	9,229	8,983	8,986	8,926	8,961
Biological sciences	37,112	37,480	37,362	38,178	38,789	39,772	40,984	41,685
Psychology	26,701	26,108	25,769	26,521	27,497	28,480	30,172	30,992
Social sciences	43,695	42,739	43,040	42,993	43,638	44,016	45,569	48,826
Engineering, total	54,321	55,528	56,283	60,708	62,167	63,400	64,716	66,547
Chemical engineering	5,869	5,734	5,546	5,594	5,674	5,359	5,282	5,453
Civil engineering	10,185	10,455	10,092	10,352	9,857	10,157	10,183	10,445
Electrical engineering	13,203	13,857	14,752	16,322	17,040	17,653	18,396	18,710
Industrial engineering	3,334	3,438	3,530	3,886	4,255	4,399	4,760	4,966
Mechanical engineering	8,330	8,698	8,875	9,801	10,175	10,438	10,426	10,843
Other engineering	13,400	13,346	13,488	14,753	15,166	15,394	15,669	16,130
Total, health fields	23,008	23,248	23,727	23,761	24,438	25,216	26,578	28,215
Part time, all surveyed fields	140,313	142,581	148,475	150,917	152,060	151,789	153,952	163,107
Sciences, total	81,361	81,729	84,461	83,700	84,503	85,312	86,537	91,196
Physical sciences	4,261	4,212	4,326	4,496	4,324	4,398	4,435	4,764
Earth, atmos., and ocean sciences ..	3,495	3,793	4,106	3,840	3,979	3,736	3,710	3,864
Mathematical sciences	6,433	6,159	5,780	5,592	5,524	5,618	5,677	6,014
Computer sciences	12,929	14,223	15,743	16,115	16,565	17,191	16,838	17,635
Agricultural sciences	2,454	2,312	2,283	2,100	2,021	2,014	2,112	2,222
Biological sciences	8,943	8,691	9,176	9,038	8,663	8,544	8,633	9,236
Psychology	14,338	14,966	15,539	15,030	15,391	15,909	16,132	17,667
Social sciences	28,508	27,373	27,508	27,489	28,036	27,902	29,000	29,794
Engineering, total	37,616	38,116	40,668	42,363	42,477	40,319	40,099	42,752
Chemical engineering	1,694	1,639	1,604	1,418	1,437	1,259	1,178	1,281
Civil engineering	5,114	5,114	5,156	5,005	5,067	4,865	4,945	5,446
Electrical engineering	12,010	12,449	13,376	13,686	14,299	14,307	14,765	15,177
Industrial engineering	6,287	6,382	7,548	8,234	8,435	7,450	6,799	6,850
Mechanical engineering	4,581	5,157	5,282	5,939	6,129	5,795	5,790	6,036
Other engineering	7,930	7,375	7,702	8,081	7,110	6,643	6,622	7,962
Total, health fields	21,336	22,736	23,346	24,854	25,080	26,158	27,316	29,159

See explanatory notes, if any, and SOURCE(S) at end of table.

Table A-9. Total and non-U.S. citizen graduate students in the science, engineering, and health fields in all U.S. institutions, and percent non-U.S. citizens, by enrollment status and field: 1984-91

Page 2 of 3

Enrollment status and field	1984	1985 1/	1986 1/	1987 1/	1988 1/	1989	1990	1991
Non-U.S. citizens, all surveyed fields .	73,616	75,399	80,143	87,556	92,406	97,710	102,288	106,764
Sciences, total	42,934	44,467	48,046	52,067	55,531	58,662	61,501	64,332
Physical sciences	7,661	8,047	8,941	10,028	10,628	11,112	11,808	12,511
Earth, atmos., and ocean sciences ..	1,865	1,804	1,894	2,096	2,223	2,443	2,601	2,717
Mathematical sciences	4,955	5,193	5,351	5,811	6,130	6,425	6,671	6,441
Computer sciences	5,548	6,359	7,458	8,006	8,728	9,070	9,724	10,729
Agricultural sciences	2,692	2,636	2,596	2,739	2,870	2,869	2,832	2,987
Biological sciences	6,086	6,389	6,956	7,888	8,801	9,835	10,945	11,726
Psychology	1,434	1,389	1,497	1,504	1,542	1,663	1,652	1,840
Social sciences	12,693	12,650	13,353	13,995	14,609	15,245	15,268	15,381
Engineering, total	27,619	28,006	28,935	32,141	33,495	35,369	36,865	38,127
Chemical engineering	2,515	2,360	2,421	2,372	2,477	2,536	2,785	2,918
Civil engineering	5,335	5,389	5,444	5,802	5,668	5,871	5,900	6,021
Electrical engineering	7,582	7,543	8,406	9,528	10,091	10,324	11,104	11,545
Industrial engineering	1,739	1,864	2,013	2,233	2,688	2,748	2,990	3,144
Mechanical engineering	4,598	4,847	4,787	5,388	5,488	6,037	5,806	6,057
Other engineering	5,850	6,003	5,864	6,818	7,083	7,853	8,280	8,442
Total, health fields	3,063	2,926	3,162	3,348	3,380	3,679	3,922	4,305
Full time, all surveyed fields	62,187	63,727	68,447	75,364	79,041	83,880	87,077	90,810
Sciences, total	36,908	38,079	41,749	45,552	48,176	51,185	53,357	55,925
Physical sciences	7,232	7,602	8,483	9,498	10,028	10,484	11,130	11,675
Earth, atmos., and ocean sciences ..	1,691	1,595	1,691	1,891	1,968	2,180	2,325	2,468
Mathematical sciences	4,242	4,538	4,824	5,145	5,494	5,774	5,988	5,794
Computer sciences	3,963	4,535	5,550	6,134	6,485	6,820	7,067	7,940
Agricultural sciences	2,468	2,421	2,338	2,544	2,617	2,610	2,567	2,674
Biological sciences	5,533	5,820	6,372	7,235	8,098	9,103	10,146	10,835
Psychology	1,094	1,045	1,161	1,170	1,215	1,331	1,361	1,498
Social sciences	10,685	10,523	11,330	11,935	12,271	12,883	12,773	13,041
Engineering, total	22,871	23,305	24,156	27,111	28,104	29,617	30,444	31,336
Chemical engineering	2,239	2,131	2,209	2,182	2,312	2,392	2,605	2,751
Civil engineering	4,365	4,507	4,524	4,780	4,617	4,798	4,932	4,860
Electrical engineering	5,840	5,996	6,639	7,713	8,081	8,379	8,703	8,940
Industrial engineering	1,372	1,471	1,623	1,801	2,064	2,115	2,290	2,386
Mechanical engineering	4,003	4,107	4,017	4,575	4,649	5,124	4,850	5,058
Other engineering	5,052	5,093	5,144	6,060	6,381	6,809	7,064	7,341
Total, health fields	2,408	2,343	2,542	2,701	2,761	3,078	3,276	3,549
Part time, all surveyed fields	11,429	11,672	11,696	12,192	13,365	13,830	15,211	15,954
Sciences, total	6,026	6,388	6,297	6,515	7,355	7,477	8,144	8,407
Physical sciences	429	445	458	530	600	628	678	836
Earth, atmos., and ocean sciences ..	174	209	203	205	255	263	276	249
Mathematical sciences	713	655	527	666	636	651	683	647
Computer sciences	1,585	1,824	1,908	1,872	2,243	2,250	2,657	2,789
Agricultural sciences	224	215	258	195	253	259	265	313
Biological sciences	553	569	584	653	703	732	799	891
Psychology	340	344	336	334	327	332	291	342
Social sciences	2,008	2,127	2,023	2,060	2,338	2,362	2,495	2,340
Engineering, total	4,748	4,701	4,779	5,030	5,391	5,752	6,421	6,791
Chemical engineering	276	229	212	190	165	144	180	167
Civil engineering	970	882	920	1,022	1,051	1,073	968	1,161
Electrical engineering	1,742	1,547	1,767	1,815	2,010	1,945	2,401	2,605
Industrial engineering	367	393	390	432	624	633	700	758
Mechanical engineering	595	740	770	813	839	913	956	999
Other engineering	798	910	720	758	702	1,044	1,216	1,101
Total, health fields	655	583	620	647	619	601	646	756

See explanatory notes, if any, and SOURCE(S) at end of table.

Table A-9. Total and non-U.S. citizen graduate students in the science, engineering, and health fields in all U.S. institutions, and percent non-U.S. citizens, by enrollment status and field: 1984-91

Page 3 of 3

Enrollment status and field	1984	1985 1/	1986 1/	1987 1/	1988 1/	1989	1990	1991
Percent non-U.S., all surveyed fields ..	18.7	18.9	19.7	20.9	21.7	22.7	23.3	23.3
Sciences, total	16.7	17.2	18.2	19.5	20.5	21.4	21.9	22.0
Physical sciences	26.0	26.8	28.8	31.1	32.5	33.7	35.1	36.4
Earth, atmos., and ocean sciences ..	12.0	11.6	12.2	13.8	15.3	17.4	18.8	19.2
Mathematical sciences	28.5	29.7	30.4	32.3	33.0	33.6	34.4	32.4
Computer sciences	23.5	24.6	25.0	25.5	27.2	27.7	29.6	31.1
Agricultural sciences	21.9	21.9	22.8	24.2	26.1	26.1	25.7	26.7
Biological sciences	13.2	13.8	14.9	16.7	18.5	20.4	22.1	23.0
Psychology	3.5	3.4	3.6	3.6	3.6	3.7	3.6	3.8
Social sciences	17.6	18.0	18.9	19.9	20.4	21.2	20.5	19.6
Engineering, total	30.0	29.9	29.8	31.2	32.0	34.1	35.2	34.9
Chemical engineering	33.3	32.0	33.9	33.8	34.8	38.3	43.1	43.3
Civil engineering	34.9	34.6	35.7	37.8	38.0	39.1	39.0	37.9
Electrical engineering	30.1	28.7	29.9	31.8	32.2	32.3	33.5	34.1
Industrial engineering	18.1	19.0	18.2	18.4	21.2	23.2	25.9	26.6
Mechanical engineering	35.6	35.0	33.8	34.2	33.7	37.2	35.8	35.9
Other engineering	27.4	29.0	27.7	29.9	31.8	35.6	37.1	35.0
Total, health fields	6.9	6.4	6.7	6.9	6.8	7.2	7.3	7.5
Full time, all surveyed fields	24.5	24.9	26.4	28.1	28.9	30.2	30.4	30.7
Sciences, total	20.9	21.6	23.3	24.8	25.8	27.0	27.4	27.8
Physical sciences	28.7	29.4	31.8	34.2	35.3	36.7	38.1	39.5
Earth, atmos., and ocean sciences ..	14.0	13.5	14.8	16.7	18.7	21.2	22.9	24.0
Mathematical sciences	38.7	40.1	40.8	41.5	42.1	42.7	43.7	41.8
Computer sciences	37.1	39.1	39.4	40.1	41.6	43.7	44.1	47.1
Agricultural sciences	25.1	24.8	25.7	27.6	29.1	29.0	28.8	29.8
Biological sciences	14.9	15.5	17.1	19.0	20.9	22.9	24.8	26.0
Psychology	4.1	4.0	4.5	4.4	4.4	4.7	4.5	4.8
Social sciences	24.5	24.6	26.3	27.8	28.1	29.3	28.0	26.7
Engineering, total	42.1	42.0	42.9	44.7	45.2	46.7	47.0	47.1
Chemical engineering	38.1	37.2	39.8	39.0	40.7	44.6	49.3	50.4
Civil engineering	42.9	43.1	44.8	46.2	46.8	47.2	48.4	46.5
Electrical engineering	44.2	43.3	45.0	47.3	47.4	47.5	47.3	47.8
Industrial engineering	41.2	42.8	46.0	46.3	48.5	48.1	48.1	48.0
Mechanical engineering	48.1	47.2	45.3	46.7	45.7	49.1	46.5	46.6
Other engineering	37.7	38.2	38.1	41.1	42.1	44.2	45.1	45.5
Total, health fields	10.5	10.1	10.7	11.4	11.3	12.2	12.3	12.6
Part time, all surveyed fields	8.1	8.2	7.9	8.1	8.8	9.1	9.9	9.8
Sciences, total	7.4	7.8	7.5	7.8	8.7	8.8	9.4	9.2
Physical sciences	10.1	10.6	10.6	11.8	13.9	14.3	15.3	17.5
Earth, atmos., and ocean sciences ..	5.0	5.5	4.9	5.3	6.4	7.0	7.4	6.4
Mathematical sciences	11.1	10.6	9.1	11.9	11.5	11.6	12.0	10.8
Computer sciences	12.3	12.8	12.1	11.6	13.5	13.1	15.8	15.8
Agricultural sciences	9.1	9.3	11.3	9.3	12.5	12.9	12.5	14.1
Biological sciences	6.2	6.5	6.4	7.2	8.1	8.6	9.3	9.6
Psychology	2.4	2.3	2.2	2.2	2.1	2.1	1.8	1.9
Social sciences	7.0	7.8	7.4	7.5	8.3	8.5	8.6	7.9
Engineering, total	12.6	12.3	11.8	11.9	12.7	14.3	16.0	15.9
Chemical engineering	16.3	14.0	13.2	13.4	11.5	11.4	15.3	13.0
Civil engineering	19.0	17.2	17.8	20.4	20.7	22.1	19.6	21.3
Electrical engineering	14.5	12.4	13.2	13.3	14.1	13.6	16.3	17.2
Industrial engineering	5.8	6.2	5.2	5.2	7.4	8.5	10.3	11.1
Mechanical engineering	13.0	14.3	14.6	13.7	13.7	15.8	16.5	16.6
Other engineering	10.1	12.3	9.3	9.4	9.9	15.7	18.4	13.8
Total, health fields	3.1	2.6	2.7	2.6	2.5	2.3	2.4	2.6

1/ Includes estimated data for master's-granting institutions, which were surveyed on a sample basis from 1985 through 1988. See Technical Notes for further information.

SOURCE: National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

Table A-10. Total and non-U.S. citizen graduate students in the science, engineering, and health fields in all U.S. institutions, and percent non-U.S. citizens, by institutional highest degree granted and field: 1983-91

Page 1 of 3

Field	1984	1985	1986	1987	1988	1989	1990	1991
Total, all surveyed fields	393,891	398,011	407,795	419,102	425,160	429,648	439,941	458,943
Sciences, total	257,610	258,383	263,771	267,416	270,988	274,555	281,232	292,270
Physical sciences	19,466	30,064	30,995	32,260	32,738	32,972	33,628	34,337
Earth, atmospheric, and ocean sciences	15,544	15,612	15,545	15,163	14,522	14,032	13,848	14,159
Mathematical sciences	17,397	17,478	17,613	17,990	18,573	19,141	19,382	19,884
Computer sciences	23,616	25,810	29,844	31,425	32,137	32,787	32,846	34,507
Agricultural sciences	12,290	12,062	11,380	11,329	11,004	11,000	11,038	11,183
Biological sciences	46,055	46,171	46,538	47,216	47,452	48,316	49,617	50,921
Psychology	41,039	41,074	41,308	41,551	42,888	44,389	46,304	48,659
Social sciences	71,203	70,112	70,548	70,482	71,674	71,918	74,569	78,620
Engineering, total	91,937	93,644	96,951	103,071	104,644	103,719	104,815	109,299
Chemical	7,563	7,373	7,150	7,012	7,111	6,618	6,460	6,734
Civil	15,299	15,569	15,248	15,357	14,924	15,022	15,128	15,891
Electrical	25,213	26,306	28,128	30,008	31,339	31,960	33,161	33,887
Industrial	9,621	9,820	11,078	12,120	12,690	11,849	11,559	11,816
Mechanical	12,911	13,855	14,157	15,740	16,304	16,233	16,216	16,879
Engineering, n.e.c.	21,330	20,721	21,190	22,834	22,276	22,037	22,291	24,092
Total, health fields	44,344	45,984	47,073	48,615	49,518	51,374	53,894	57,374
Doctorate institutions, all surveyed fields	342,956	346,264	355,875	366,927	372,101	377,360	384,014	398,405
Sciences, total	220,389	220,450	226,075	230,028	233,618	237,438	241,688	249,760
Physical sciences	17,747	28,410	29,312	30,543	30,967	31,212	31,807	32,504
Earth, atmospheric, and ocean sciences	14,281	14,286	14,217	13,989	13,368	12,871	12,677	12,866
Mathematical sciences	14,885	15,067	15,268	15,663	16,192	16,892	16,905	17,297
Computer sciences	18,306	20,366	23,823	25,204	26,083	26,742	26,520	27,667
Agricultural sciences	11,538	11,327	10,680	10,675	10,339	10,302	10,355	10,445
Biological sciences	41,609	41,963	42,490	43,369	43,699	44,695	45,814	47,054
Psychology	30,011	30,033	30,490	30,656	31,554	32,515	33,575	34,685
Social sciences	61,012	58,998	59,795	59,929	61,416	62,209	64,035	67,242
Engineering, total	85,309	87,100	90,222	95,772	96,969	96,683	96,878	100,253
Chemical	7,352	7,196	7,015	6,891	6,990	6,532	6,361	6,618
Civil	14,414	14,737	14,421	14,472	13,831	14,096	14,136	14,773
Electrical	23,545	24,599	26,375	27,940	29,028	29,778	30,213	30,453
Industrial	8,794	8,940	10,084	11,068	11,687	10,819	10,324	10,288
Mechanical	12,089	12,966	13,246	14,607	15,090	15,050	14,937	15,511
Engineering, n.e.c.	19,115	18,662	19,081	20,794	20,343	20,408	20,907	22,610
Total, health fields	37,258	38,714	39,578	41,127	41,514	43,239	45,448	48,392
Master's institutions, all surveyed fields	50,935	51,747	51,920	52,175	53,059	52,288	55,927	60,538
Sciences, total	37,221	37,933	37,696	37,388	37,370	37,117	39,544	42,510
Physical sciences	1,719	1,654	1,683	1,717	1,771	1,760	1,821	1,833
Earth, atmospheric, and ocean sciences	1,263	1,326	1,328	1,174	1,154	1,161	1,171	1,293
Mathematical sciences	2,512	2,411	2,345	2,327	2,381	2,249	2,477	2,587
Computer sciences	5,310	5,444	6,021	6,221	6,054	6,045	6,326	6,840
Agricultural sciences	752	735	700	654	665	698	683	738
Biological sciences	4,446	4,208	4,048	3,847	3,753	3,621	3,803	3,867
Psychology	11,028	11,041	10,818	10,895	11,334	11,874	12,729	13,974
Social sciences	10,191	11,114	10,753	10,553	10,258	9,709	10,534	11,378
Engineering, total	6,628	6,544	6,729	7,299	7,675	7,036	7,937	9,046
Chemical	211	177	135	121	121	86	99	116
Civil	885	832	827	885	1,093	926	992	1,118
Electrical	1,668	1,707	1,753	2,068	2,311	2,182	2,948	3,434
Industrial	827	880	994	1,052	1,003	1,030	1,235	1,528
Mechanical	822	889	911	1,133	1,214	1,183	1,279	1,368
Engineering, n.e.c.	2,215	2,059	2,109	2,040	1,933	1,629	1,384	1,482
Total, health fields	7,086	7,270	7,495	7,488	8,004	8,135	8,446	8,982

See explanatory notes, if any, and SOURCE at end of table.

Table A-10. Total and non-U.S. citizen graduate students in the science, engineering, and health fields in all U.S. institutions, and percent non-U.S. citizens, by institutional highest degree granted and field: 1983-91

Page 2 of 3

Field	1984	1985	1986	1987	1988	1989	1990	1991
Non-U.S. citizens, all surveyed fields	73,616	75,399	80,143	87,556	92,406	97,710	102,288	106,764
Sciences, total	42,934	44,467	48,046	52,067	55,531	58,662	61,501	64,332
Physical sciences	7,661	8,047	8,941	10,028	10,628	11,112	11,808	12,511
Earth, atmospheric, and ocean sciences	1,865	1,804	1,894	2,096	2,223	2,443	2,601	2,717
Mathematical sciences	4,955	5,193	5,351	5,811	6,130	6,425	6,671	6,441
Computer sciences	5,548	6,359	7,458	8,006	8,728	9,070	9,724	10,729
Agricultural sciences	2,692	2,636	2,596	2,739	2,870	2,869	2,832	2,987
Biological sciences	6,086	6,389	6,956	7,888	8,801	9,835	10,945	11,726
Psychology	1,434	1,389	1,497	1,504	1,542	1,663	1,652	1,840
Social sciences	12,693	12,650	13,353	13,995	14,609	15,245	15,268	15,331
Engineering, total	27,619	28,006	28,935	32,141	33,495	35,369	36,865	38,127
Chemical	2,515	2,360	2,421	2,372	2,477	2,536	2,785	2,918
Civil	5,335	5,389	5,444	5,802	5,668	5,871	5,900	6,021
Electrical	7,582	7,543	8,406	9,528	10,091	10,324	11,104	11,545
Industrial	1,739	1,864	2,013	2,233	2,688	2,748	2,990	3,144
Mechanical	4,598	4,847	4,787	5,388	5,488	6,037	5,806	6,057
Engineering, n.e.c.	5,850	6,003	5,864	6,818	7,083	7,853	8,280	8,442
Total, health fields	3,063	2,926	3,162	3,348	3,380	3,679	3,922	4,305
Doctorate institutions, all surveyed fields	69,029	70,798	75,555	82,816	87,612	92,766	96,803	100,533
Sciences, total	39,875	41,430	44,898	48,851	52,153	55,324	58,103	60,299
Physical sciences	7,372	7,792	8,622	9,717	10,280	10,742	11,402	11,993
Earth, atmospheric, and ocean sciences	1,802	1,736	1,814	2,045	2,166	2,379	2,548	2,629
Mathematical sciences	4,615	4,891	5,091	5,485	5,802	6,131	6,348	6,093
Computer sciences	4,754	5,536	6,432	6,901	7,537	7,852	8,439	9,154
Agricultural sciences	2,575	2,500	2,514	2,653	2,781	2,778	2,720	2,851
Biological sciences	5,796	6,079	6,685	7,622	8,534	9,572	10,638	11,390
Psychology	1,189	1,201	1,288	1,296	1,334	1,451	1,469	1,609
Social sciences	11,772	11,695	12,452	13,132	13,719	14,419	14,539	14,580
Engineering, total	26,403	26,750	27,695	30,803	32,252	33,971	34,962	36,138
Chemical	2,464	2,316	2,392	2,336	2,449	2,516	2,755	2,889
Civil	5,123	5,200	5,300	5,601	5,497	5,696	5,667	5,783
Electrical	7,325	7,245	8,011	9,065	9,639	9,782	10,273	10,724
Industrial	1,642	1,775	1,914	2,118	2,557	2,598	2,788	2,910
Mechanical	4,452	4,656	4,588	5,195	5,305	5,805	5,492	5,685
Engineering, n.e.c.	5,397	5,558	5,490	6,488	6,805	7,574	7,987	8,147
Total, health fields	2,751	2,618	2,962	3,162	3,207	3,471	3,738	4,096
Master's institutions, all surveyed fields	4,587	4,601	4,588	4,740	4,794	4,944	5,485	6,231
Sciences, total	3,059	3,037	3,148	3,216	3,378	3,338	3,398	4,033
Physical sciences	289	255	319	311	348	370	406	518
Earth, atmospheric, and ocean sciences	63	68	80	51	57	64	53	88
Mathematical sciences	340	302	260	326	328	294	323	348
Computer sciences	794	823	1,026	1,105	1,191	1,218	1,285	1,575
Agricultural sciences	117	136	82	86	89	91	112	136
Biological sciences	290	310	271	266	267	263	307	336
Psychology	245	188	209	208	208	212	183	231
Social sciences	921	955	901	863	890	826	729	801
Engineering, total	1,216	1,256	1,240	1,338	1,243	1,398	1,903	1,989
Chemical	51	44	29	36	28	20	30	29
Civil	212	189	144	201	171	175	233	238
Electrical	257	298	395	463	452	542	831	821
Industrial	97	89	99	115	131	150	202	234
Mechanical	146	191	199	193	183	232	314	372
Engineering, n.e.c.	453	445	374	330	278	279	293	295
Total, health fields	312	308	200	186	173	208	184	209

See explanatory notes, if any, and SOURCE at end of table.

Table A-10. Total and non-U.S. citizen graduate students in the science, engineering, and health fields in all U.S. institutions, and percent non-U.S. citizens, by institutional highest degree granted and field: 1983-91

Page 3 of 3

Field	1984	1985	1986	1987	1988	1989	1990	1991
Percent non-U.S., all surveyed fields	18.7	18.9	19.7	20.9	21.7	22.7	23.3	23.3
Sciences, total	16.7	17.2	18.2	19.5	20.5	21.4	21.9	22.0
Physical sciences	39.4	26.8	28.8	31.1	32.5	33.7	35.1	36.4
Earth, atmospheric, and ocean sciences	12.0	11.6	12.2	13.8	15.3	17.4	18.8	19.2
Mathematical sciences	28.5	29.7	30.4	32.3	33.0	33.6	34.4	32.4
Computer sciences	23.5	24.6	25.0	25.5	27.2	27.7	29.6	31.1
Agricultural sciences	21.9	21.9	22.8	24.2	26.1	26.1	25.7	26.7
Biological sciences	13.2	13.8	14.9	16.7	18.5	20.4	22.1	23.0
Psychology	3.5	3.4	3.6	3.6	3.6	3.7	3.6	3.8
Social sciences	17.8	18.0	18.9	19.9	20.4	21.2	20.5	19.6
Engineering, total	30.0	29.9	29.8	31.2	32.0	34.1	35.2	34.9
Chemical	33.3	32.0	33.9	33.8	34.8	38.3	43.1	43.3
Civil	34.9	34.6	35.7	37.8	38.0	39.1	39.0	37.9
Electrical	30.1	28.7	29.9	31.8	32.2	32.3	33.5	34.1
Industrial	18.1	19.0	18.2	18.4	21.2	23.2	25.9	26.6
Mechanical	35.6	35.0	33.8	34.2	33.7	37.2	35.8	35.9
Engineering, n.e.c.	27.4	29.0	27.7	29.9	31.8	35.6	37.1	35.0
Total, health fields	6.9	6.4	6.7	6.9	6.8	7.2	7.3	7.5
Doctorate institutions, all surveyed fields	20.1	20.4	21.2	22.6	23.5	24.6	25.2	25.2
Sciences, total	18.1	18.8	19.9	21.2	22.3	23.3	24.0	24.1
Physical sciences	41.5	27.4	29.4	31.8	33.2	34.4	35.8	36.9
Earth, atmospheric, and ocean sciences	12.6	12.2	12.8	14.6	16.2	18.5	20.1	20.4
Mathematical sciences	31.0	32.5	33.3	35.0	35.8	36.3	37.6	35.2
Computer sciences	26.0	27.2	27.0	27.4	28.9	29.4	31.8	33.1
Agricultural sciences	22.3	22.1	23.5	24.9	26.9	27.0	26.3	27.3
Biological sciences	13.9	14.5	15.7	17.6	19.5	21.4	23.2	24.2
Psychology	4.0	4.0	4.2	4.2	4.2	4.5	4.4	4.6
Social sciences	19.3	19.8	20.8	21.9	22.3	23.2	22.7	21.7
Engineering, total	30.9	30.7	30.7	32.2	33.3	35.1	36.1	36.0
Chemical	33.5	32.2	34.1	33.9	35.0	38.5	43.3	43.7
Civil	35.5	35.3	36.8	38.7	39.7	40.4	40.1	39.1
Electrical	31.1	29.5	30.4	32.4	33.2	32.8	34.0	35.2
Industrial	18.7	19.9	19.0	19.1	21.9	24.0	27.0	28.3
Mechanical	36.8	35.9	34.6	35.6	35.2	38.6	36.8	36.7
Engineering, n.e.c.	28.2	29.8	28.8	31.2	33.5	37.1	38.2	36.0
Total, health fields	7.4	6.8	7.5	7.7	7.7	8.0	8.2	8.5
Master's institutions, all surveyed fields	9.0	8.9	8.8	9.1	9.0	9.5	9.8	10.3
Sciences, total	8.2	8.0	8.4	8.6	9.0	9.0	8.6	9.5
Physical sciences	16.8	15.4	19.0	18.1	19.6	21.0	22.3	28.3
Earth, atmospheric, and ocean sciences	5.0	5.1	6.0	4.3	4.9	5.5	4.5	6.8
Mathematical sciences	13.5	12.5	11.1	14.0	13.8	13.1	13.0	13.5
Computer sciences	15.0	15.1	17.0	17.8	19.7	20.1	20.3	23.0
Agricultural sciences	15.6	18.5	11.7	13.1	13.4	13.0	16.4	18.4
Biological sciences	6.5	7.4	6.7	6.9	7.1	7.3	8.1	8.7
Psychology	2.2	1.7	1.9	1.9	1.8	1.8	1.4	1.7
Social sciences	9.0	8.6	8.4	8.2	8.7	8.5	6.9	7.0
Engineering, total	18.3	19.2	18.4	18.3	16.2	19.9	24.0	22.0
Chemical	24.2	24.9	21.5	29.8	23.1	23.3	30.3	25.0
Civil	24.0	22.7	17.4	22.7	15.6	18.9	23.5	21.3
Electrical	15.4	17.5	22.5	22.4	19.6	24.8	28.2	23.9
Industrial	11.7	10.1	10.0	10.9	13.1	14.6	16.4	15.3
Mechanical	17.8	21.5	21.8	17.0	15.1	19.6	24.6	27.2
Engineering, n.e.c.	20.5	21.6	17.7	16.2	14.4	17.1	21.2	19.9
Total, health fields	4.4	4.2	2.7	2.5	2.2	2.6	2.2	2.3

NOTES: Master's-granting institutions were surveyed on a sample basis from 1985 through 1988. Data shown here are therefore subject to sampling error. See technical notes for further information.
n.e.c. = Not elsewhere classified

SOURCE: National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

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Table A-11. Full-time graduate students in the science, engineering, and health fields in all U.S. institutions, by citizenship and field: 1976-91

Page 1 of 2

Year	Total, all surveyed fields	Sciences								
		Sciences, total	Physical sciences	Earth, atmos., and ocean sciences	Mathematical sciences	Computer sciences	Agricultural sciences	Biological sciences	Psychology	Social sciences
	Total enrollment									
1976	220,287	164,815	21,916	9,677	10,695	4,473	8,758	37,047	24,105	48,144
1977	223,940	168,199	22,252	10,219	10,952	4,748	9,317	38,087	25,643	46,981
1978	227,698	169,516	22,505	10,556	10,365	4,604	9,567	38,603	25,703	47,613
1979 1/ .	225,072	165,537	22,158	10,511	9,804	4,926	9,598	38,122	24,963	45,455
1980	232,938	169,466	22,535	10,724	9,668	5,853	9,794	38,218	25,859	46,815
1981	239,647	172,176	22,918	10,969	9,902	6,587	9,980	37,928	26,678	47,214
1982	243,471	172,742	23,308	11,038	10,154	7,445	10,076	37,582	26,715	46,424
1983	246,046	172,537	24,040	11,436	10,823	9,171	9,891	36,989	25,812	44,375
1984	253,578	176,249	25,205	12,049	10,964	10,687	9,836	37,112	26,701	43,695
1985 2/..	255,430	176,654	25,852	11,819	11,319	11,587	9,750	37,480	26,108	42,739
1986 2/..	259,320	179,310	26,669	11,439	11,833	14,101	9,097	37,362	25,769	43,040
1987 2/..	268,185	183,716	27,764	11,323	12,398	15,310	9,229	38,178	26,521	42,993
1988 2/..	273,090	186,485	28,414	10,543	13,049	15,572	8,983	38,789	27,497	43,638
1989	277,859	189,243	28,574	10,296	13,523	15,596	8,986	39,772	28,480	44,016
1990	285,989	194,695	29,193	10,138	13,705	16,008	8,926	40,984	30,172	45,569
1991	295,836	201,074	29,573	10,295	13,870	16,872	8,961	41,685	30,992	48,826
	U.S. citizens									
1976 3/..	--	--	--	--	--	--	--	--	--	--
1977 3/..	--	--	--	--	--	--	--	--	--	--
1978 3/..	--	--	--	--	--	--	--	--	--	--
1979 3/..	--	--	--	--	--	--	--	--	--	--
1980	204,733	152,073	19,006	9,868	8,049	5,032	8,247	35,229	25,384	41,258
1981	189,172	141,742	17,174	9,570	6,648	4,521	7,754	33,340	25,468	37,267
1982	188,782	140,009	17,037	9,534	6,513	4,887	7,701	32,727	25,711	35,899
1983	188,409	138,622	17,555	9,789	6,935	5,981	7,508	31,950	24,733	34,171
1984	191,391	139,341	17,973	10,358	6,722	6,724	7,368	31,579	25,607	33,010
1985 2/..	191,703	138,575	18,250	10,224	6,781	7,052	7,329	31,660	25,063	32,216
1986 2/..	190,873	137,561	18,186	9,748	7,009	8,551	6,759	30,990	24,608	31,710
1987 2/..	192,821	138,164	18,266	9,432	7,253	9,176	6,685	30,943	25,351	31,058
1988 2/..	194,049	138,309	18,386	8,575	7,555	9,087	6,366	30,691	26,282	31,367
1989	193,979	138,058	18,090	8,116	7,749	8,776	6,376	30,669	27,149	31,133
1990	198,912	141,338	18,063	7,813	7,717	8,941	6,359	30,838	28,811	32,796
1991	205,026	145,149	17,898	7,827	8,076	8,932	6,287	30,850	29,494	35,785
	Non-U.S citizens									
1976 3/..	--	--	--	--	--	--	--	--	--	--
1977 3/..	--	--	--	--	--	--	--	--	--	--
1978 3/..	--	--	--	--	--	--	--	--	--	--
1979 3/..	--	--	--	--	--	--	--	--	--	--
1980	28,205	17,393	3,529	856	1,619	821	1,547	2,989	475	5,557
1981	50,475	30,434	5,744	1,399	3,254	2,066	2,226	4,588	1,210	9,947
1982	54,689	32,733	6,271	1,504	3,641	2,558	2,375	4,855	1,004	10,525
1983	57,637	33,915	6,485	1,647	3,888	3,190	2,383	5,039	1,079	10,204
1984	62,187	36,908	7,232	1,691	4,242	3,963	2,468	5,533	1,094	10,685
1985 2/..	63,727	38,079	7,602	1,595	4,538	4,535	2,421	5,820	1,045	10,523
1986 2/..	68,447	41,749	8,483	1,691	4,824	5,550	2,338	6,372	1,161	11,330
1987 2/..	75,364	45,552	9,498	1,891	5,145	6,134	2,544	7,235	1,170	11,935
1988 2/..	79,041	48,176	10,028	1,968	5,494	6,485	2,617	8,098	1,215	12,271
1989	83,880	51,185	10,484	2,180	5,774	6,820	2,610	9,103	1,331	12,883
1990	87,077	53,357	11,130	2,325	5,988	7,067	2,567	10,146	1,361	12,773
1991	90,810	55,925	11,675	2,468	5,794	7,940	2,674	10,835	1,498	13,041

See explanatory notes and SOURCE(S) at end of table.

Table A-11. Full-time graduate students in the science, engineering, and health fields in all U.S. institutions, by citizenship and field: 1976-91

Year	Engineering									Health fields
	Engi-neering, total	Aerospace engi-neering	Chemical engi-neering	Civil engi-neering	Electrical engi-neering	Industrial engi-neering	Mechanical engi-neering	Metallur-gical & materials engi-	Other engi-neering	
	Total enrollment									
1976	37,813	1,245	3,743	7,363	8,278	4,152	4,931	1,787	6,314	17,659
1977	36,950	1,165	4,014	7,025	8,147	3,578	4,919	1,860	6,242	18,791
1978	37,554	1,187	4,174	7,440	8,528	3,343	4,883	1,951	6,048	20,628
1979 1/ ...	37,913	1,138	4,258	7,673	8,512	3,256	4,952	1,973	6,151	21,622
1980	40,378	1,152	4,555	7,998	9,039	3,743	5,428	2,135	6,328	23,094
1981	43,088	1,327	4,863	8,324	9,963	3,772	5,841	2,254	6,744	24,383
1982	46,244	1,483	5,382	9,195	10,450	3,642	6,422	2,454	7,216	24,485
1983	50,233	1,522	6,084	9,762	11,533	3,831	7,267	2,478	7,756	23,276
1984	54,321	1,840	6,489	10,185	13,203	3,334	8,330	2,704	8,236	23,008
1985 2/....	55,528	1,854	6,348	10,455	13,857	3,438	8,698	2,872	8,006	23,248
1986 2/....	56,283	1,994	6,123	10,092	14,752	3,530	8,875	3,088	7,829	23,727
1987 2/....	60,708	2,154	6,166	10,352	16,322	3,886	9,801	3,347	8,680	23,761
1988 2/....	62,167	2,372	6,318	9,857	17,040	4,255	10,175	3,397	8,753	24,438
1989	63,400	2,533	5,958	10,157	17,653	4,399	10,438	3,421	8,841	25,216
1990	64,716	2,772	5,788	10,183	18,396	4,760	10,426	3,685	8,706	26,578
1991	66,547	3,010	5,937	10,445	18,710	4,966	10,843	3,848	8,788	28,215
	U.S. citizens									
1976 3/....	--	--	--	--	--	--	--	--	--	--
1977 3/....	--	--	--	--	--	--	--	--	--	--
1978 3/....	--	--	--	--	--	--	--	--	--	--
1979 3/....	--	--	--	--	--	--	--	--	--	--
1980	30,816	822	3,300	6,183	7,291	2,849	3,889	1,462	5,020	21,844
1981	25,092	759	2,660	4,952	5,666	2,316	3,211	1,147	4,381	22,338
1982	26,434	882	2,985	5,459	5,665	2,047	3,363	1,342	4,691	22,339
1983	28,812	945	3,483	5,714	6,421	2,205	3,767	1,297	4,980	20,975
1984	31,450	1,088	3,960	5,820	7,363	1,962	4,327	1,530	5,400	20,600
1985 2/....	32,223	1,115	3,930	5,948	7,861	1,967	4,591	1,663	5,148	20,905
1986 2/....	32,127	1,258	3,664	5,568	8,113	1,907	4,858	1,802	4,957	21,185
1987 2/....	33,597	1,343	3,717	5,572	8,609	2,085	5,226	1,841	5,204	21,060
1988 2/....	34,063	1,559	3,688	5,240	8,959	2,191	5,526	1,803	5,097	21,677
1989	33,783	1,502	3,204	5,359	9,274	2,284	5,314	1,778	5,068	22,138
1990	34,272	1,757	2,884	5,251	9,693	2,470	5,576	1,869	4,772	23,302
1991	35,211	1,920	2,857	5,585	9,770	2,580	5,785	2,003	4,711	24,666
	Non-U.S citizens									
1976 3/....	--	--	--	--	--	--	--	--	--	--
1977 3/....	--	--	--	--	--	--	--	--	--	--
1978 3/....	--	--	--	--	--	--	--	--	--	--
1979 3/....	--	--	--	--	--	--	--	--	--	--
1980	9,562	330	1,255	1,815	1,748	894	1,539	673	1,308	1,250
1981	17,996	568	2,203	3,372	4,297	1,456	2,630	1,107	2,363	2,045
1982	19,810	601	2,397	3,736	4,785	1,595	3,059	1,112	2,525	2,146
1983	21,421	577	2,601	4,048	5,112	1,626	3,500	1,181	2,776	2,301
1984	22,871	752	2,529	4,365	5,840	1,372	4,003	1,174	2,836	2,408
1985 2/....	23,305	739	2,418	4,507	5,996	1,471	4,107	1,209	2,858	2,343
1986 2/....	24,156	736	2,459	4,524	6,639	1,623	4,017	1,286	2,872	2,542
1987 2/....	27,111	811	2,449	4,780	7,713	1,801	4,575	1,506	3,476	2,701
1988 2/....	28,104	813	2,630	4,617	8,081	2,064	4,649	1,594	3,656	2,761
1989	29,617	1,031	2,754	4,798	8,379	2,115	5,124	1,643	3,773	3,078
1990	30,444	1,015	2,904	4,932	8,703	2,290	4,850	1,816	3,934	3,276
1991	31,336	1,090	3,080	4,860	8,940	2,386	5,058	1,845	4,077	3,549

1/ Master's-granting institutions were not surveyed in 1979; totals include estimates based on 1978 and 1980 data.

2/ Includes estimated data for master's-granting institutions, which were surveyed on a sample basis from 1985 through 1988. See technical notes for further information.

3/ Data on citizenship distribution are not available prior to 1981.

NOTE: -- = not available

SOURCE: National Science Foundation/SRS, survey of Graduate Students and Postdoctorates in Science and Engineering

Table A-12. Total and non-U.S. citizen full-time graduate students in the science, engineering, and health fields in all U.S. institutions, and percent non-U.S. citizens, by field: 1983-91

Page 1 of 3

Field	1983	1984	1985 1/	1986 1/	1987 1/	1988 1/	1989	1990	1991
Total, all surveyed fields	246,046	253,578	255,430	259,320	268,185	273,090	277,859	285,989	295,836
Total, science and engineering fields	222,770	230,570	232,182	235,593	244,424	248,652	252,643	259,411	267,621
Sciences, total	172,537	176,249	176,654	179,310	183,716	186,485	189,243	194,695	201,074
Physical sciences	24,040	25,205	25,852	26,669	27,764	28,414	28,574	29,193	29,573
Astronomy	590	585	596	635	654	681	705	762	790
Chemistry	14,287	15,023	15,123	15,580	15,997	16,235	16,088	16,257	16,390
Physics	9,072	9,495	9,964	10,287	10,957	11,304	11,638	12,040	12,222
Physical sciences, n.e.c.	91	102	169	167	156	194	143	134	171
Earth, atmospheric, and ocean sciences	11,436	12,049	11,819	11,439	11,323	10,543	10,296	10,138	10,295
Atmospheric sciences	779	785	776	872	855	822	829	810	828
Geosciences	7,521	8,203	8,093	7,703	7,384	6,669	6,314	5,986	5,808
Oceanography	1,593	1,612	1,599	1,562	1,694	1,651	1,629	1,799	1,853
Earth, atmos., and ocean sci., n.e.c.	1,543	1,449	1,351	1,302	1,390	1,402	1,524	1,543	1,806
Mathematical sciences	10,823	10,964	11,319	11,833	12,398	13,049	13,523	13,705	13,870
Computer sciences	9,171	10,687	11,587	14,101	15,310	15,572	15,596	16,008	16,872
Agricultural sciences	9,891	9,836	9,750	9,097	9,229	8,983	8,986	8,926	8,961
Biological sciences	36,989	37,112	37,480	37,362	38,178	38,789	39,772	40,984	41,685
Anatomy	937	921	936	891	893	929	973	980	922
Biochemistry	3,850	4,007	4,329	4,288	4,447	4,550	4,768	4,865	4,936
Biology	9,022	9,010	8,971	8,531	8,577	8,685	8,993	9,333	9,320
Biometry/epidemiology	919	877	751	796	1,055	1,197	1,242	1,228	1,274
Biophysics	423	437	419	391	429	399	522	610	605
Botany	3,169	3,043	2,993	2,836	2,883	2,712	2,685	2,599	2,471
Cell biology	1,110	1,138	1,209	1,406	1,655	1,886	2,023	2,177	2,515
Ecology	910	845	877	976	857	779	836	879	890
Entomology/parasitology	1,340	1,305	1,282	1,138	1,107	1,061	1,061	1,009	1,015
Genetics	924	962	986	1,057	1,171	1,208	1,284	1,283	1,317
Microbiology	3,517	3,706	3,828	3,879	3,871	4,019	4,309	4,319	4,365
Nutrition	3,120	2,988	3,018	3,040	3,055	3,014	2,876	2,874	2,920
Pathology	1,021	1,068	1,083	1,036	1,070	1,135	1,126	1,160	1,122
Pharmacology	1,940	2,005	1,996	2,036	2,036	2,004	2,070	2,221	2,292
Physiology	1,805	1,766	1,898	1,967	2,005	1,996	2,008	2,057	2,116
Zoology	2,136	2,052	1,863	1,718	1,720	1,782	1,719	1,774	1,683
Biosciences, n.e.c.	824	984	1,054	1,039	1,110	1,252	1,460	1,568	1,888
Psychology	25,812	26,701	26,108	25,769	26,521	27,497	28,480	30,172	30,992
Social sciences	44,375	43,695	42,739	43,060	42,993	43,638	44,016	45,569	48,826
Agricultural economics	1,978	2,074	2,027	1,990	1,964	1,857	1,909	1,912	1,891
Anthropology	2,105	1,920	1,966	1,906	2,051	1,998	2,244	2,211	2,221
Economics (except agricultural)	9,479	9,215	8,925	8,975	9,003	9,028	9,072	9,147	9,326
Geography	2,139	2,202	2,173	2,124	2,108	2,290	2,215	2,356	2,238
History and philosophy of science	243	226	263	227	237	279	268	303	320
Linguistics	2,157	2,373	2,310	2,337	2,356	2,449	2,520	2,468	2,596
Political science	13,653	13,343	12,796	13,171	12,710	13,007	13,372	14,062	15,272
Sociology	4,875	4,792	4,745	4,672	4,585	5,026	5,082	5,293	5,679
Sociology/anthropology	657	971	606	765	782	860	908	833	782
Social sciences, n.e.c.	5,069	4,779	5,034	5,101	4,683	5,055	4,748	5,004	5,490
Engineering, total	50,233	54,321	55,528	56,283	60,708	62,167	63,400	64,716	66,547
Aerospace	1,522	1,640	1,654	1,682	2,152	2,372	2,533	2,772	3,010
Agricultural	730	766	773	767	881	825	879	851	793
Biomedical	931	1,031	1,121	1,129	1,627	1,362	1,455	1,611	1,798
Chemical	5,608	5,839	5,734	5,596	5,592	5,675	5,359	5,282	5,453
Civil	9,795	10,185	10,455	10,092	10,352	9,857	10,157	10,183	10,445
Electrical	11,533	13,203	13,857	14,722	16,332	17,040	17,653	18,398	18,710
Engineering science	1,277	1,356	1,272	1,266	1,425	1,388	1,332	1,259	1,332
Industrial	3,851	3,332	3,238	3,530	3,886	4,255	4,366	4,760	4,926
Mechanical	7,297	8,330	8,698	8,875	9,801	10,175	10,238	10,426	10,823
Metallurgical/materials	2,528	2,704	2,872	3,088	3,327	3,397	3,421	3,685	3,828
Mining	373	428	422	391	422	235	415	338	332
Nuclear	1,042	1,052	1,018	1,030	1,059	1,044	1,105	1,112	1,080
Petroleum	476	620	912	577	572	644	590	506	482
Engineering, n.e.c.	3,394	3,603	3,398	3,248	3,559	3,572	3,553	3,535	3,451
Total, health fields	23,276	23,008	23,248	23,727	23,761	24,438	25,216	26,578	28,215
Dentistry	727	701	768	745	825	909	930	859	840
Neurology	202	258	313	335	373	275	590	685	798
Nursing	6,612	6,204	6,113	6,025	5,878	5,924	6,022	5,987	6,129
Pharmaceutical sciences	1,703	1,697	1,899	1,718	1,763	1,727	1,829	2,036	2,137
Preventive medicine/community health	2,056	3,981	3,955	2,137	2,072	2,186	2,217	2,206	2,500
Speech pathology/audiology	5,353	5,280	5,292	5,276	5,362	5,089	5,315	5,722	5,840
Veterinary sciences	378	363	423	315	309	292	606	668	709
Clinical medicine, n.e.c.	1,078	1,089	1,030	1,160	1,147	1,210	1,270	1,366	1,431
Health related, n.e.c.	3,169	3,455	3,644	3,596	3,795	4,330	4,435	5,049	5,844

See explanatory notes, if any, and SOURCE(S) at end of table.

Table A-12. Total and non-U.S. citizen full-time graduate students in the science, engineering, and health fields in all U.S. institutions, and percent non-U.S. citizens, by field: 1983-91

Page 2 of 3

Field	1983	1984	1985 1/	1986 1/	1987 1/	1988 1/	1989	1990	1991
Non-U.S. citizens, all surveyed fields ...	57,637	62,187	63,727	68,447	75,364	79,041	83,880	87,077	90,810
Total, science and engineering fields ...	55,336	59,779	61,384	65,905	72,663	76,280	80,802	83,801	87,261
Sciences, total ...	33,915	36,908	38,079	41,749	45,552	48,176	51,185	53,357	55,925
Physical sciences ...	6,485	7,232	7,602	8,483	9,498	10,028	10,484	11,130	11,675
Astronomy ...	102	105	117	150	160	172	160	158	187
Chemistry ...	3,216	3,525	3,635	4,095	4,513	4,940	5,322	5,715	6,088
Physics ...	3,157	3,584	3,828	4,215	4,800	4,894	4,966	5,225	5,351
Physical sciences, n.e.c. ...	10	18	22	23	25	22	36	32	49
Earth, atmospheric, and ocean sciences	1,647	1,691	1,595	1,691	1,891	1,968	2,180	2,325	2,468
Atmospheric sciences ...	187	182	163	196	206	219	231	235	262
Geosciences ...	913	923	880	945	1,019	1,101	1,395	1,279	1,387
Oceanography ...	340	377	317	312	390	356	237	522	530
Earth, atmos., and ocean sci., n.e.c. ...	207	209	235	238	276	292	317	289	289
Mathematical sciences ...	3,888	4,242	4,538	4,824	5,145	5,494	5,774	5,988	5,794
Computer sciences ...	3,190	3,963	4,535	5,550	6,134	6,485	6,820	7,067	7,940
Agricultural sciences ...	2,383	2,468	2,421	2,338	2,544	2,617	2,610	2,567	2,674
Biological sciences ...	5,039	5,533	5,820	6,372	7,235	8,098	9,103	10,146	10,835
Anatomy ...	88	75	58	91	121	153	180	215	[illegible]
Biochemistry ...	658	775	847	976	1,098	1,317	1,335	1,526	[illegible]
Biology ...	851	961	1,103	1,095	1,252	1,324	1,328	1,712	[illegible]
Biometry/epidemiology ...	150	157	123	123	[illegible]	221	305	310	[illegible]
Biophysics ...	70	80	80	93	[illegible]	125	179	208	[illegible]
Botany ...	595	612	619	627	[illegible]	777	867	850	[illegible]
Cell biology ...	103	128	147	186	[illegible]	333	205	727	[illegible]
Ecology ...	80	78	87	100	[illegible]	110	123	152	[illegible]
Entomology/parasitology ...	227	250	232	252	[illegible]	295	282	387	[illegible]
Genetics ...	117	125	152	172	[illegible]	572	265	500	[illegible]
Microbiology ...	435	515	573	666	[illegible]	809	853	1,070	[illegible]
Nutrition ...	847	851	881	833	[illegible]	827	676	926	[illegible]
Pathology ...	247	209	169	186	[illegible]	251	250	628	[illegible]
Pharmacology ...	173	215	[illegible]	593	[illegible]	396	559	550	[illegible]
Physiology ...	188	215	222	245	[illegible]	350	227	320	[illegible]
Zoology ...	131	125	126	178	[illegible]	323	261	299	[illegible]
Biosciences, n.e.c. ...	91	145	138	155	159	203	257	371	470
Psychology ...	1,079	1,094	1,045	1,161	1,170	1,215	1,331	1,361	1,498
Social sciences ...	10,204	10,685	10,523	11,330	11,935	12,271	12,883	12,773	13,061
Agricultural economics ...	702	785	782	798	759	737	870	916	930
Anthropology ...	386	402	386	425	536	582	651	655	698
Economics (except agricultural) ...	3,554	3,548	3,575	4,000	4,093	4,244	4,480	4,513	4,627
Geography ...	391	386	372	360	362	425	407	429	438
History and philosophy of science ...	35	20	25	31	39	21	25	13	22
Linguistics ...	710	850	836	923	921	952	962	1,012	1,066
Political science ...	2,515	2,740	2,530	2,902	2,978	2,903	2,915	2,941	2,712
Sociology ...	985	1,101	1,099	1,205	1,233	1,315	1,723	1,377	1,565
Sociology/anthropology ...	132	129	122	128	122	129	122	132	153
Social sciences, n.e.c. ...	792	724	795	828	848	926	924	1,012	1,028
Engineering, total ...	21,621	22,871	23,305	24,156	27,111	28,104	29,617	30,446	31,336
Aerospace ...	377	752	739	739	811	813	1,031	1,015	1,090
Agricultural ...	321	321	327	353	224	236	273	290	281
Biomedical ...	199	195	220	192	280	379	231	376	385
Chemical ...	2,321	2,239	2,131	2,209	2,182	2,312	2,302	2,805	2,731
Civil ...	2,048	2,365	2,507	2,522	2,780	2,617	2,798	2,832	2,860
Electrical ...	5,112	5,820	5,996	6,630	7,713	8,081	8,379	8,705	8,920
Engineering science ...	440	295	797	779	591	595	622	557	628
Industrial ...	1,626	1,372	1,271	1,293	1,801	2,062	2,115	2,290	2,386
Mechanical ...	3,500	4,003	4,107	4,017	4,575	4,979	5,124	5,850	5,058
Metallurgical/materials ...	1,181	1,172	1,209	1,286	1,506	1,562	1,673	1,819	1,925
Mining ...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Nuclear ...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Petroleum ...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Engineering, n.e.c. ...	1,201	1,189	1,274	1,291	1,544	1,593	1,567	1,642	1,775
Total, health fields ...	2,301	2,408	2,343	2,562	2,701	2,761	3,078	3,276	3,549
Dentistry ...	129	122	130	155	179	145	156	170	182
Neurology ...	15	27	29	32	28	69	97	102	136
Nursing ...	202	159	172	166	160	193	183	120	197
Pharmaceutical sciences ...	587	619	630	633	661	676	792	893	934
Preventive medicine/community health ...	695	718	662	799	810	824	872	875	975
Speech pathology/audiology ...	205	242	208	222	251	251	267	276	268
Veterinary sciences ...	93	111	110	133	138	153	161	188	201
Clinical medicine, n.e.c. ...	129	168	118	186	137	212	232	265	270
Health related, n.e.c. ...	227	242	284	211	237	288	313	356	358

See explanatory notes, if any, and SOURCE(S) at end of table.

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Table A-12. Total and non-U.S. citizen full-time graduate students in the science, engineering, and health fields in all U.S. institutions, and percent non-U.S. citizens, by field: 1983-91

Field	1983	1984	1985 1/	1986 1/	1987 1/	1988 1/	1989	1990	1991
Percent non-U.S., all surveyed fields	23.4	24.5	24.9	26.4	28.1	28.9	30.2	30.4	30.7
Total, science and engineering fields	24.8	25.9	26.4	28.0	29.7	30.7	32.0	32.3	32.6
Sciences, total	19.7	20.9	21.6	23.3	24.8	25.8	27.0	27.4	27.8
Physical sciences	27.0	28.7	29.4	31.8	34.2	35.3	36.7	38.1	39.5
Astronomy	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Chemistry	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Physics	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Physical sciences, n.e.c.	11.0	17.6	13.0	13.8	16.0	11.3	25.2	23.9	28.7
Earth, atmospheric, and ocean sciences	14.4	14.0	13.5	14.8	16.7	18.7	21.2	22.9	24.0
Atmospheric sciences	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Geosciences	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Oceanography	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Earth, atmos., and ocean sci., n.e.c.	13.4	14.4	17.4	18.3	19.9	20.8	20.8	18.7	16.0
Mathematical sciences	35.9	38.7	40.1	40.8	41.5	42.1	42.7	43.7	41.8
Computer sciences	34.8	37.1	39.1	39.4	40.1	41.6	43.7	44.1	47.1
Agricultural sciences	24.1	25.1	24.8	25.7	27.6	29.1	29.0	28.8	29.8
Biological sciences	13.6	14.9	15.5	17.1	19.0	20.9	22.9	24.8	26.0
Anatomy	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Biochemistry	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Biology	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Biometry/epidemiology	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Biophysics	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Botany	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Cell biology	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Ecology	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Entomology/parasitology	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Genetics	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Microbiology	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Nutrition	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Pathology	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Pharmacology	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Physiology	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Zoology	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Biosciences, n.e.c.	11.0	14.7	13.1	14.9	14.3	16.2	17.6	23.7	24.9
Psychology	4.2	4.1	4.0	4.5	4.4	4.4	4.7	4.5	4.8
Social sciences	23.0	24.5	24.6	26.3	27.8	28.1	29.3	28.0	26.7
Agricultural economics	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Anthropology	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Economics (except agricultural)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Geography	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
History and philosophy of science	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Linguistics	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Political science	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Sociology	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Sociology/anthropology	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Social sciences, n.e.c.	15.6	15.1	15.8	16.2	18.1	18.3	19.5	20.3	18.7
Engineering, total	42.6	42.1	42.0	42.9	44.7	45.2	46.7	47.0	47.1
Aerospace	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Agricultural	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Biomedical	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Chemical	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Civil	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Electrical	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Engineering science	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Industrial	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Mechanical	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Metallurgical/materials	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Mining	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Nuclear	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Petroleum	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Engineering, n.e.c.	35.4	33.0	37.5	39.7	43.4	44.6	44.1	46.4	51.4
Total, health fields	9.9	10.5	10.1	10.7	11.4	11.3	12.2	12.3	12.6
Dentistry	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Neurology	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Nursing	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Pharmaceutical sciences	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Preventive medicine/community health	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Speech pathology/audiology	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Veterinary sciences	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Clinical medicine, n.e.c.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Health related, n.e.c.	7.2	7.0	7.8	5.9	6.2	6.7	7.1	7.1	6.1

1/ Includes estimated data for master's-granting institutions, which were surveyed on a sample basis from 1985 through 1988. See technical notes for further information.

NOTE: n.e.c. = not elsewhere classified

SOURCE: National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

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Table A-13. Total and non-U.S. citizen graduate students in the science, engineering, and health fields in all U.S. institutions, and percent non-U.S. citizens, by geographic distribution: 1983-91

Page 1 of 3

Geographic distribution	1983	1984	1985 1/	1986 1/	1987 1/	1988 1/	1989	1990	1991
Total	384,872	393,891	398,011	407,795	419,102	425,150	429,648	439,941	458,943
New England	30,215	31,124	29,020	29,898	30,441	30,408	33,246	32,749	34,324
Connecticut	6,718	6,898	6,105	6,391	6,356	6,581	7,049	7,117	7,443
Maine	416	509	580	523	538	614	649	667	689
Massachusetts	19,796	20,262	19,034	19,654	20,044	19,650	21,703	21,032	22,179
New Hampshire	839	857	803	829	878	882	1,103	1,131	1,175
Rhode Island	1,806	1,924	1,834	1,883	1,993	2,074	2,068	2,138	2,162
Vermont	640	674	664	618	632	607	674	664	676
Middle Atlantic	70,964	73,049	69,142	70,041	71,744	71,356	77,333	78,224	80,827
New Jersey	10,119	10,251	10,829	11,037	11,046	11,400	11,915	11,632	11,674
New York	42,630	44,101	41,215	41,636	42,904	42,219	45,599	46,069	47,648
Pennsylvania	18,215	18,697	17,098	17,368	17,794	17,737	19,819	20,523	21,505
East North Central	65,599	67,934	64,963	65,844	68,712	71,269	75,854	78,133	81,426
Illinois	19,024	19,697	18,919	19,692	20,335	21,260	22,865	23,612	24,381
Indiana	8,281	8,567	7,651	7,157	7,916	8,529	8,787	9,357	9,769
Michigan	12,693	13,229	13,613	13,757	14,617	14,813	14,935	15,890	16,570
Ohio	16,976	17,750	16,921	17,489	18,017	18,660	20,264	19,911	20,924
Wisconsin	8,625	8,691	7,859	7,749	7,827	8,007	9,003	9,363	9,782
West North Central	24,801	25,797	23,846	24,385	24,902	25,139	27,775	28,713	29,625
Iowa	4,490	4,746	4,517	4,651	4,810	4,818	5,139	5,192	5,516
Kansas	4,736	5,106	4,397	4,257	4,266	4,418	4,758	5,156	5,325
Minnesota	5,638	5,849	5,255	5,661	5,570	5,373	6,986	7,246	6,979
Missouri	6,132	6,132	5,830	5,920	6,338	6,521	6,748	6,877	7,405
Nebraska	2,143	2,229	2,165	2,139	2,130	2,238	2,346	2,380	2,519
North Dakota	930	946	906	949	970	915	947	947	886
South Dakota	732	789	776	808	818	856	851	915	995
South Atlantic	54,790	52,625	53,137	55,156	57,864	59,692	63,156	65,208	68,623
Delaware	1,173	1,180	1,112	1,150	1,189	1,303	1,198	1,257	1,378
District of Columbia	8,370	7,847	8,312	8,679	9,246	9,323	8,876	8,316	8,508
Florida	10,876	9,299	8,096	8,862	10,047	10,862	12,198	12,753	13,560
Georgia	6,117	5,978	9,220	9,005	8,386	6,926	7,278	7,599	8,169
Maryland	7,316	7,755	7,671	7,093	8,059	8,078	9,043	9,597	9,827
North Carolina	7,671	8,015	7,858	7,829	8,353	8,210	9,023	9,555	9,860
South Carolina	2,940	3,021	2,996	3,007	3,326	3,385	3,309	3,566	3,679
Virginia	7,155	7,311	5,740	8,823	7,321	9,768	10,226	10,547	11,418
West Virginia	3,172	2,219	2,059	1,976	1,937	1,837	2,005	2,018	2,224
East South Central	14,150	14,785	14,405	14,617	15,216	15,488	17,813	18,854	19,511
Alabama	3,579	3,683	3,824	4,187	4,506	4,830	5,329	5,779	6,334
Kentucky	3,266	3,341	2,837	2,745	2,751	2,894	3,957	4,109	3,916
Mississippi	2,108	2,288	2,512	2,443	2,573	2,505	2,680	2,745	2,698
Tennessee	5,197	5,473	5,232	5,242	5,386	5,259	5,847	6,221	6,563
West South Central	34,366	37,051	34,498	34,873	35,408	35,207	37,687	39,855	42,372
Arkansas	1,882	1,720	1,182	1,181	1,161	1,180	1,723	1,716	1,861
Louisiana	4,283	4,806	4,848	4,814	4,648	4,564	4,745	4,859	5,201
Oklahoma	3,618	3,940	3,881	4,008	4,105	4,360	4,172	4,330	4,698
Texas	24,583	26,585	24,587	24,870	25,494	25,103	27,047	28,950	30,612
Mountain	22,607	22,751	22,266	23,302	24,079	24,838	25,217	25,607	27,519
Arizona	6,140	6,147	6,212	6,743	6,834	6,938	7,254	7,443	7,552
Colorado	6,735	6,425	6,150	6,468	7,108	7,440	7,367	7,313	8,554
Idaho	937	1,004	1,008	1,041	1,035	1,173	1,225	1,405	1,560
Montana	1,035	1,094	1,086	1,049	980	970	1,050	1,065	1,084
Nevada	600	722	561	547	505	609	880	1,043	1,183
New Mexico	2,595	2,741	2,549	2,655	2,723	2,926	2,894	2,774	2,945
Utah	3,763	3,783	3,921	3,986	4,154	4,043	3,850	3,762	3,790
Wyoming	802	835	779	813	740	739	697	802	851
Pacific	65,345	66,480	60,807	63,430	64,313	65,346	69,270	70,240	72,177
Alaska	564	604	352	381	399	387	537	580	680
California	53,437	54,379	49,943	52,408	53,152	54,187	56,791	57,853	59,033
Hawaii	1,828	1,782	1,702	1,705	1,820	1,822	1,829	1,857	1,984
Oregon	3,217	3,358	3,234	3,262	3,429	3,454	3,634	3,612	3,851
Washington	6,299	6,357	5,576	5,674	5,513	5,496	6,479	6,338	6,629
Outlying areas	2,035	2,295	2,436	2,552	2,520	2,298	2,297	2,358	2,539
State unknown 2/	0	0	23,491	23,697	23,903	24,109	0	0	0

See explanatory notes, if any, and SOURCE(S) at end of table.

Table A-13. Total and non-U.S. citizen graduate students in the science, engineering, and health fields in all U.S. institutions, and percent non-U.S. citizens, by geographic distribution: 1983-91

Page 2 of 3

Geographic distribution	1983	1984	1985 1/	1986 1/	1987 1/	1988 1/	1989	1990	1991
Non-U.S. citizens	68,051	73,616	75,399	80,143	87,556	92,406	97,710	102,288	106,764
New England	5,056	5,655	5,327	5,427	6,008	6,525	7,038	7,323	8,397
Connecticut	907	912	901	842	1,001	1,157	1,241	1,316	1,423
Maine	49	88	91	86	90	124	139	147	157
Massachusetts	3,527	4,053	3,783	3,871	4,207	4,512	4,871	4,954	5,901
New Hampshire	86	90	98	112	141	141	180	201	206
Rhode Island	453	458	412	478	537	560	565	621	613
Vermont	34	54	42	38	32	31	42	84	97
Middle Atlantic	12,379	12,876	13,002	13,881	15,047	16,124	17,304	18,457	18,582
New Jersey	1,743	1,684	1,981	2,107	2,269	2,604	2,784	2,814	2,710
New York	7,092	7,675	7,490	7,978	8,785	9,394	10,048	10,755	10,911
Pennsylvania	3,544	3,517	3,531	3,796	3,993	4,126	4,472	4,888	4,961
East North Central	12,360	13,833	14,028	15,176	16,808	17,812	19,721	20,675	21,333
Illinois	3,142	4,051	3,875	4,273	4,554	5,046	5,418	5,693	6,115
Indiana	1,553	1,689	1,744	1,779	2,198	2,051	2,492	2,693	2,721
Michigan	2,596	2,898	3,208	3,478	3,832	4,054	4,566	4,871	4,875
Ohio	3,387	3,423	3,580	3,752	4,286	4,650	5,039	5,059	5,178
Wisconsin	1,682	1,772	1,621	1,894	1,938	2,011	2,206	2,359	2,444
West North Central	5,238	5,578	5,473	5,986	6,557	6,841	7,505	7,806	7,965
Iowa	1,314	1,517	1,501	1,747	1,913	1,961	2,028	2,050	2,163
Kansas	1,035	960	969	1,067	1,053	1,132	1,322	1,463	1,424
Minnesota	1,097	1,164	1,113	1,195	1,385	1,446	1,797	1,797	1,702
Missouri	1,101	1,186	1,144	1,226	1,363	1,409	1,452	1,550	1,652
Nebraska	339	375	395	363	405	404	410	429	555
North Dakota	179	173	170	193	217	240	227	226	228
South Dakota	173	203	181	195	221	249	269	291	241
South Atlantic	8,343	8,522	9,055	9,967	11,600	12,640	13,392	13,750	14,343
Delaware	197	218	216	269	277	345	308	366	206
District of Columbia	1,653	1,456	1,628	1,659	2,132	2,297	2,309	1,965	2,030
Florida	1,641	1,714	1,727	1,937	2,146	2,350	2,598	2,671	2,864
Georgia	1,190	1,093	1,150	1,255	1,424	1,594	1,623	1,773	1,977
Maryland	951	1,110	1,186	1,406	1,592	1,730	1,998	2,177	2,347
North Carolina	960	1,096	1,234	1,268	1,460	1,548	1,646	1,714	1,736
South Carolina	420	469	520	543	658	736	803	895	946
Virginia	970	1,025	1,045	1,236	1,519	1,669	1,717	1,815	1,830
West Virginia	361	341	349	394	392	371	390	374	407
East South Central	2,127	2,402	2,635	2,621	3,072	3,409	3,619	3,671	4,051
Alabama	661	652	824	923	1,129	1,266	1,249	1,390	1,544
Kentucky	440	484	484	499	518	592	678	672	654
Mississippi	395	491	512	535	652	642	634	581	657
Tennessee	631	775	815	664	773	909	1,058	1,028	1,196
West South Central	7,066	7,915	8,191	8,333	8,731	8,790	9,117	9,553	10,654
Arkansas	242	221	167	156	186	141	145	178	248
Louisiana	1,024	1,160	1,432	1,397	1,409	1,470	1,418	1,405	1,549
Oklahoma	1,005	1,134	1,109	1,149	1,212	1,262	1,266	1,332	1,492
Texas	4,795	5,400	5,483	5,631	5,924	5,917	6,288	6,638	7,365
Mountain	3,778	4,154	3,981	4,358	4,989	5,547	6,000	6,014	5,936
Arizona	1,010	1,215	1,335	1,427	1,526	1,736	1,991	2,088	2,142
Colorado	1,196	1,196	897	977	1,181	1,299	1,477	1,452	1,277
Idaho	100	121	147	171	174	211	261	388	282
Montana	130	152	111	125	140	173	202	300	219
Nevada	86	102	64	83	82	136	200	212	217
New Mexico	452	527	513	494	567	667	625	249	503
Utah	695	705	784	924	1,167	1,196	1,113	1,155	1,138
Wyoming	109	136	130	157	152	129	131	170	158
Pacific	11,647	12,635	11,989	12,643	12,933	12,857	13,934	14,889	15,344
Alaska	84	71	43	0	23	33	76	72	102
California	9,347	10,077	9,529	9,946	10,028	9,864	10,649	11,695	12,003
Hawaii	488	482	516	527	540	576	616	663	756
Oregon	785	914	982	1,066	1,182	1,195	1,303	1,262	1,285
Washington	943	1,091	919	1,104	1,160	1,189	1,290	1,197	1,198
Outlying areas	57	46	69	69	90	109	80	150	159
State unknown 2/	0	0	1,649	1,682	1,721	1,752	0	0	0

See explanatory notes, if any, and SOURCE(S) at end of table.

Table A-13. Total and non-U.S. citizen graduate students in the science, engineering, and health fields in all U.S. institutions, and percent non-U.S. citizens, by geographic distribution: 1983-91

Page 3 of 3

Geographic distribution	1983	1984	1985 1/	1986 1/	1987 1/	1988 1/	1989	1990	1991
Percent non-U.S. citizens ..	17.7	18.7	18.9	19.7	20.9	21.7	22.7	23.3	23.3
New England	16.7	18.2	18.4	18.2	19.7	21.5	21.2	22.4	24.5
Connecticut	13.5	13.2	14.8	13.2	15.7	17.6	17.6	18.5	19.1
Maine	11.8	17.3	15.7	16.4	16.7	20.2	21.2	22.0	22.8
Massachusetts	17.8	20.0	19.9	19.7	21.0	23.0	22.4	23.6	26.6
New Hampshire	10.3	10.5	12.2	13.5	16.1	16.0	16.3	17.8	17.5
Rhode Island	25.1	23.8	22.5	25.4	26.9	27.0	27.3	26.0	28.4
Vermont	5.3	8.0	6.3	6.1	5.1	5.1	6.2	12.7	14.3
Middle Atlantic	17.4	17.6	18.8	19.8	21.0	22.6	22.4	23.6	23.0
New Jersey	17.2	16.4	18.3	19.1	20.5	22.8	23.4	24.2	23.6
New York	16.6	17.4	18.5	19.2	20.5	22.3	22.0	23.3	22.9
Pennsylvania	19.5	18.8	20.7	21.9	22.4	23.3	22.6	23.8	23.1
East North Central	18.8	20.4	21.6	23.0	24.5	25.0	26.0	26.5	26.2
Illinois	16.5	20.6	20.5	21.7	22.4	23.7	23.7	24.1	25.1
Indiana	18.8	19.7	22.8	24.9	27.8	24.9	28.4	28.8	27.9
Michigan	20.5	21.6	23.6	25.3	26.2	27.4	30.6	30.7	29.4
Ohio	20.0	19.3	21.2	21.5	23.8	24.6	24.9	25.4	24.7
Wisconsin	19.5	20.4	20.6	24.4	24.8	25.1	24.5	25.2	25.0
West North Central	21.1	21.6	23.0	24.5	26.3	27.2	27.0	27.2	26.9
Iowa	29.3	31.9	33.2	37.6	39.8	40.7	39.5	39.5	39.2
Kansas	21.9	18.8	22.0	25.1	24.7	25.6	32.8	28.2	26.7
Minnesota	19.5	19.9	21.2	21.2	24.6	26.9	25.7	24.8	24.4
Missouri	18.0	19.3	19.6	20.6	21.5	21.6	21.5	22.5	22.3
Nebraska	15.8	16.8	18.2	17.0	19.0	18.1	17.5	18.0	22.0
North Dakota	19.2	18.9	18.8	20.3	22.4	26.2	24.0	23.9	25.7
South Dakota	23.6	25.7	23.3	24.1	27.0	29.1	31.6	31.8	24.2
South Atlantic	15.2	16.2	17.0	18.1	20.0	21.2	21.2	21.1	20.9
Delaware	12.8	18.5	19.4	23.4	23.3	26.5	25.7	29.1	29.5
District of Columbia	18.9	18.6	19.6	19.1	23.1	24.6	26.0	23.6	23.9
Florida	12.1	18.2	19.0	19.4	21.4	21.9	21.3	20.8	21.1
Georgia	15.5	18.3	18.3	20.9	22.3	23.7	22.3	23.3	21.8
Maryland	13.0	14.3	15.5	18.3	19.8	21.4	22.1	22.7	23.9
North Carolina	12.5	13.7	15.7	16.2	17.5	18.4	18.2	17.9	17.6
South Carolina	14.3	15.5	17.4	18.1	19.8	21.7	24.3	25.1	25.7
Virginia	13.6	14.0	13.5	17.0	16.3	17.1	16.8	17.2	16.0
West Virginia	11.4	15.4	16.9	19.9	20.2	20.2	19.5	18.5	18.3
East South Central	15.0	16.2	18.3	17.9	20.2	22.0	20.3	19.5	20.8
Alabama	18.5	17.7	21.5	22.0	25.1	26.2	23.4	24.1	24.4
Kentucky	13.5	14.5	17.1	18.2	18.8	20.5	17.1	16.4	16.7
Mississippi	18.7	21.5	20.4	21.9	25.3	25.6	23.7	21.3	24.4
Tennessee	12.1	14.2	15.6	12.7	14.4	17.3	18.1	16.5	18.2
West South Central	20.6	21.4	23.7	23.9	24.7	25.0	24.2	24.0	25.1
Arkansas	12.4	12.8	14.1	13.2	16.0	11.9	8.4	10.4	13.1
Louisiana	22.8	24.1	29.5	29.0	30.3	32.2	29.9	28.9	29.8
Oklahoma	27.8	28.8	28.6	28.7	29.5	28.9	30.3	30.8	32.0
Texas	19.5	20.3	22.3	22.6	23.2	23.6	23.2	22.9	24.1
Mountain	16.7	18.3	17.9	18.7	20.7	22.3	23.8	23.5	21.6
Arizona	19.4	18.8	21.5	21.2	22.3	25.0	27.4	28.1	28.4
Colorado	17.8	18.6	14.6	15.1	16.6	17.5	20.0	19.9	14.9
Idaho	10.7	12.1	14.6	16.4	16.8	18.0	21.3	20.5	18.1
Montana	12.6	13.9	10.2	11.9	14.3	17.8	19.2	18.8	20.2
Nevada	14.3	12.1	11.4	15.2	16.2	22.3	22.7	20.3	18.3
New Mexico	17.4	19.2	20.1	18.6	20.8	22.8	21.6	16.5	17.1
Utah	18.5	18.6	20.0	23.5	28.1	29.6	28.8	30.7	30.0
Wyoming	13.6	16.3	16.7	19.3	20.5	17.5	18.8	21.2	18.6
Pacific	17.8	19.0	19.7	19.9	20.1	19.7	20.1	21.2	21.3
Alaska	14.8	11.8	12.2	0.0	5.8	8.5	12.2	12.4	15.0
California	17.5	18.5	18.1	19.0	18.2	18.2	18.8	20.3	20.3
Hawaii	26.7	27.0	30.3	30.9	29.7	31.6	33.7	35.7	38.1
Oregon	22.4	27.2	30.2	32.7	34.5	34.6	35.9	32.6	33.2
Washington	15.0	17.2	16.5	19.5	21.0	21.6	19.9	18.9	18.1
Outlying areas	2.8	2.0	2.8	2.7	3.6	4.7	3.5	6.4	6.3
State unknown 2/..............	0.0	0.0	7.0	7.1	7.2	7.3	0.0	0.0	0.0

1/ Includes estimated data for master's-granting institutions, which were surveyed on a sample basis from 1985 through 1988. See Technical Notes for further information.

2/ These numbers represent the total of all nonsampled master's-granting institutions.

SOURCE: National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

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Table A-14. Non-U.S. citizens enrolled in graduate programs in the science, engineering, and health fields in all U.S. institutions reporting non-U.S. citizens, ranked by non-U.S. citizen enrollment in surveyed fields: 1991

Page 1 of 10

Institution and rank		All surveyed fields	Science fields	Engineering fields	Health fields
1	Ohio State University	1,829	1,176	592	61
2	University of Wisconsin - Madison	1,824	1,106	610	108
3	Texas A & M University	1,735	945	783	7
4	University of Southern California	1,713	840	806	67
5	Univ of Texas at Austin	1,694	732	902	60
6	University of Illinois at Urbana	1,656	1,135	503	18
7	University of Michigan	1,596	544	966	86
8	Purdue University	1,515	840	610	65
9	University of Minnesota	1,505	853	524	128
10	University of Calif at Berkeley	1,445	711	655	79
Subtotal, first 10 institutions		16,512	8,882	6,951	679
11	University of Maryland - College Park	1,398	774	620	4
12	Massachusetts Institute of Technology	1,373	527	846	0
13	Cornell University	1,345	923	392	30
14	Pennsylvania State University	1,291	616	670	5
15	University of Calif at Los Angeles	1,231	669	393	169
16	Iowa State University of Sci & Tech	1,227	839	388	0
17	Michigan State University	1,212	927	261	24
18	University of Florida	1,090	545	507	38
19	Rutgers the State University	1,083	667	385	31
20	University of Arizona	1,075	663	370	42
Subtotal, first 20 institutions		28,837	16,032	11,783	1,022
21	Columbia University Main Division	1,061	639	353	69
22	Wayne State University	1,031	493	522	16
23	Arizona State University	1,027	462	553	12
24	Stanford University	1,023	464	555	4
25	George Washington University	1,016	556	429	31
26	SUNY - Buffalo	1,007	536	399	72
27	University of Massachusetts	978	579	347	52
28	University of Illinois at Chicago	959	514	347	98
29	Georgia Institute of Technology	909	215	694	0
30	Harvard University	899	692	76	131
Subtotal, first 30 institutions		38,747	21,182	16,058	1,507
31	University of Pennsylvania	899	668	228	3
32	University of Iowa	883	544	218	121
33	Virginia Polytechnic Inst and State Univ	879	382	490	7
34	SUNY - Stony Brook	836	700	133	3
35	North Carolina State Univ at Raleigh	830	383	441	6
36	University of Pittsburgh	822	500	230	92
37	Louisiana State University System	789	452	330	7
38	University of Cincinnati	785	284	434	67
39	New Jersey Institute of Technology	775	290	485	0
40	University of Washington	764	460	282	22
Subtotal, first 40 institutions		47,009	25,845	19,329	1,835
41	University of Hawaii at Manoa	756	552	141	63
42	Oregon State University	755	486	263	6
43	University of Missouri - Columbia	746	325	417	4
44	CUNY Graduate School and Univ Center	745	623	112	10
45	University of Calif at Davis	723	555	165	3
46	Syracuse University	719	359	359	1
47	University of Oklahoma	704	210	462	32
48	Indiana University	697	646	7	44
49	Oklahoma State University	692	332	359	1
50	University of Connecticut	683	470	160	53
Subtotal, first 50 institutions		54,229	30,403	21,774	2,052

See explanatory notes, if any, and SOURCE(S) at end of table.

Table A-14. Non-U.S. citizens enrolled in graduate programs in the science, engineering, and health fields in all U.S. institutions reporting non-U.S. citizens, ranked by non-U.S. citizen enrollment in surveyed fields: 1991

Page 2 of 10

Institution and rank		All surveyed fields	Science fields	Engineering fields	Health fields
51	Northeastern University	670	340	253	77
52	University of Chicago	668	658	0	10
53	Boston University	650	408	237	5
54	Northwestern University	629	305	300	24
55	Kansas State University	619	451	162	6
56	Illinois Institute of Technology	618	366	252	0
57	New York University	602	587	0	15
58	Case Western Reserve University	582	268	296	18
59	University of Kansas	547	368	111	68
60	Auburn University	537	236	269	32
	Subtotal, first 60 institutions	60,351	34,390	23,654	2,307
61	University of Utah	535	278	228	29
62	Univ of Texas at Arlington	533	254	277	2
63	University of Tennessee at Knoxville	508	276	225	7
64	Carnegie-Mellon University	506	244	262	0
65	University of Kentucky	501	298	165	38
66	Utah State University	501	277	222	2
67	Rensselaer Polytechnic Institute	494	131	363	0
68	Clemson University	493	203	289	1
69	Princeton University	491	357	134	0
70	University of Georgia	491	466	3	22
	Subtotal, first 70 institutions	65,404	37,174	25,822	2,408
71	University of Nebraska - Lincoln	491	341	136	14
72	Yale University	487	392	88	7
73	University of Rochester	480	350	113	17
74	Southern Illinois Univ at Carbondale	476	307	146	23
75	Ohio University	470	289	168	13
76	Johns Hopkins University	466	269	60	137
77	University of Houston-University Park	465	215	216	34
78	University of Lowell	452	208	241	3
79	California Institute of Technology	444	235	209	0
80	San Jose State University	435	132	285	18
	Subtotal, first 80 institutions	70,070	39,912	27,484	2,674
81	University of Calif at San Diego	435	350	84	1
82	University of South Carolina	429	308	111	10
83	Univ of North Carolina at Chapel Hill	426	384	7	35
84	Texas Tech University	424	253	171	0
85	US Naval Postgraduate School	417	224	193	0
86	University of Delaware	405	285	119	1
87	University of Calif at Santa Barbara	404	244	153	7
88	University of Akron	393	183	210	0
89	Temple University	391	305	50	36
90	University of Miami	391	254	136	1
	Subtotal, first 90 institutions	74,185	42,702	28,718	2,765
91	The American University	387	387	0	0
92	CUNY City College	375	184	190	1
93	University of Colorado	375	240	120	15
94	Washington State University	375	224	136	15
95	West Virginia University	375	185	179	11
96	Colorado State University	373	196	167	10
97	Santa Clara University	369	191	178	0
98	SUNY - Albany	363	351	0	12
99	Tulane University of Louisiana	360	169	50	141
100	New York Institute of Technology	357	332	25	0
	Subtotal, first 100 institutions	77,894	45,161	29,763	2,970

See explanatory notes, if any, and SOURCE(S) at end of table.

Table A-14. Non-U.S. citizens enrolled in graduate programs in the science, engineering, and health fields in all U.S. institutions reporting non-U.S. citizens, ranked by non-U.S. citizen enrollment in surveyed fields: 1991

Institution and rank		All surveyed fields	Science fields	Engineering fields	Health fields
101	Florida State University	346	323	23	0
102	Washington University	342	207	132	3
103	Calif State Univ at Long Beach	329	137	182	10
104	Mississippi State University	322	210	106	6
105	Drexel University	320	103	217	0
106	University of Denver	318	308	6	4
107	The University of Alabama	317	141	176	0
108	Brown University	314	259	55	0
109	Western Michigan University	314	219	91	4
110	Rice University	313	197	116	0
Subtotal, first 110 institutions		81,129	47,265	30,867	2,997
111	University of Wisconsin - Milwaukee	307	178	125	4
112	University of Missouri - Rolla	304	90	214	0
113	Howard University	301	249	52	0
114	SUNY - Binghamton	300	168	129	3
115	University of Notre Dame	300	223	77	0
116	University of Toledo	300	120	162	18
117	University of Rhode Island	299	170	112	17
118	Vanderbilt University	298	188	108	2
119	The University of Alabama at Birmingham	291	186	35	70
120	University of North Texas	291	287	3	1
Subtotal, first 120 institutions		84,120	49,124	31,884	3,112
121	Northrop University	287	130	157	0
122	Northern Illinois University	280	219	61	0
123	University of Calif at Irvine	275	157	103	15
124	Lehigh University	268	75	193	0
125	University of Southwestern Louisiana	268	205	63	0
126	Florida Atlantic University	266	78	186	2
127	University of Mississippi	265	184	62	19
128	George Mason University	261	213	40	8
129	University of Idaho	259	168	91	0
130	Duke University	256	162	93	1
Subtotal, first 130 institutions		86,805	50,715	32,933	3,157
131	Florida Institute of Technology	254	130	124	0
132	Marquette University	250	91	148	11
133	University of New Mexico	250	164	76	10
134	CUNY Brooklyn College	249	248	0	1
135	University of Oregon	249	249	0	0
136	Eastern Michigan University	248	181	67	0
137	University of Maryland - Baltimore County	246	171	74	1
138	University of South Florida	246	99	131	16
139	Calif State Univ at Fullerton	245	137	107	1
140	Univ of Texas at Dallas	234	198	29	7
Subtotal, first 140 institutions		89,276	52,383	33,689	3,204
141	University of Virginia	226	133	91	2
142	Univ of Texas at El Paso	219	74	145	0
143	Old Dominion University	213	130	81	2
144	Tufts University	209	142	61	6
145	Polytechnic University	208	98	110	0
146	University of Arkansas	205	113	92	0
147	Columbia University Teachers College	204	140	0	64
148	Kent State University	200	194	0	6
149	Michigan Technological University	198	90	108	0
150	Calif State University at Northridge	191	40	124	27
Subtotal, first 150 institutions		91,349	53,537	34,501	3,311

See explanatory notes, if any, and SOURCE(S) at end of table.

Table A-14. Non-U.S. citizens enrolled in graduate programs in the science, engineering, and health fields in all U.S. institutions reporting non-U.S. citizens, ranked by non-U.S. citizen enrollment in surveyed fields: 1991

Institution and rank		All surveyed fields	Science fields	Engi-neering fields	Health fields
151	New Mexico State University	188	132	56	0
152	Lamar University	187	68	119	0
153	University of Calif at Riverside	186	186	0	0
154	Wichita State University	186	69	113	4
155	Brandeis University	185	185	0	0
156	North Dakota State University	185	133	42	10
157	Colorado School of Mines	183	107	76	0
158	Georgetown University	183	183	0	0
159	Portland State University	176	96	79	1
160	Clarkson University	174	58	116	0
	Subtotal, first 160 institutions	93,182	54,754	35,102	3,326
161	Stevens Institute of Technology	174	37	137	0
162	New School for Social Research	172	172	0	0
163	San Francisco State University	169	129	0	40
164	Emory University	163	118	0	45
165	University of Detroit	163	88	75	0
166	Worcester Polytechnic Institute	161	62	99	0
167	University of Wyoming	158	106	50	2
168	University of Maine	157	112	45	0
169	Calif State University at Sacramento	153	63	87	3
170	Southern Methodist University	152	95	57	0
	Subtotal, first 170 institutions	94,804	55,736	35,652	3,416
171	University of Nevada at Reno	149	85	64	0
172	SUNY - Coll of Env Science and Forestry	148	117	31	0
173	Univ of Texas Hlth Sci Ctr at Houston	145	102	0	43
174	Catholic University of America	143	103	40	0
175	Azusa Pacific University	142	138	0	4
176	Bowling Green State University	140	140	0	0
177	Bradley University	138	36	102	0
178	The University of Alabama in Huntsville	137	65	72	0
179	Western Illinois University	134	130	0	4
180	University of Central Florida	132	61	70	1
	Subtotal, first 180 institutions	96,212	56,713	36,031	3,468
181	Wright State University	131	65	63	3
182	St John's University	129	40	0	89
183	University of Louisville	129	75	52	2
184	Virginia Commonwealth University	129	100	3	26
185	Long Island University	128	73	0	55
186	University of Maryland - Balt Prof Sch	126	77	0	49
187	Florida International University	124	81	38	5
188	University of Missouri - Kansas City	123	110	0	13
189	San Diego State University	122	83	27	12
190	Alabama A & M University	118	118	0	0
	Subtotal, first 190 institutions	97,471	57,535	36,214	3,722
191	Montana State University	117	79	36	2
192	Memphis State University	115	57	58	0
193	South Dakota State University	114	59	55	0
194	West Coast University	114	41	73	0
195	University of New Haven	113	88	25	0
196	East Texas State University	112	112	0	0
197	University of Puerto Rico	112	67	45	0
198	Baylor College of Medicine	108	94	0	14
199	De Paul University	108	108	0	0
200	South Dakota School of Mines and Tech	106	24	82	0
	Subtotal, first 200 institutions	98,590	58,264	36,588	3,738

See explanatory notes, if any, and SOURCE(S) at end of table.

Table A-14. Non-U.S. citizens enrolled in graduate programs in the science, engineering, and health fields in all U.S. institutions reporting non-U.S. citizens, ranked by non-U.S. citizen enrollment in surveyed fields: 1991

Page 5 of 10

Institution and rank		All surveyed fields	Science fields	Engineering fields	Health fields
201	Ball State University	105	103	0	2
202	Clark Atlanta University	105	105	0	0
203	Mankato State University	104	100	0	4
204	University of Calif at Santa Cruz	103	94	9	0
205	Brigham Young University	102	83	19	0
206	University of Alaska at Fairbanks	102	61	41	0
207	Loyola University of Chicago	101	101	0	0
208	Calif State Univ at Los Angeles	100	56	42	2
209	Texas A & I University	100	29	71	0
210	University of New Hampshire	100	76	24	0
	Subtotal, first 210 institutions	99,612	59,072	36,794	3,746
211	Louisiana Tech University	99	17	82	0
212	Dartmouth College	98	52	46	0
213	University of Vermont & St Agric College	97	73	14	10
214	Boston College	95	87	0	8
215	University of Tulsa	93	23	70	0
216	Tennessee Technological University	92	6	86	0
217	Univ of Med and Dent of New Jersey	90	78	0	12
218	Indiana State University	89	71	18	0
219	University of Montana	87	78	0	9
220	University of South Alabama	87	56	31	0
	Subtotal, first 220 institutions	100,539	59,613	37,141	3,785
221	Univ of North Carolina at Charlotte	86	49	37	0
222	University of Calif at San Francisco	84	39	3	42
223	Clark University	83	83	0	0
224	Villanova University	82	21	61	0
225	Rochester Institute of Technology	80	51	28	1
226	Univ of Texas Med Branch at Galveston	80	69	0	11
227	Calif State Univ at Hayward	78	70	0	8
228	Claremont Univ Center & Graduate School	78	78	0	0
229	Fordham University	75	75	0	0
230	Fairleigh Dickinson University	74	53	21	0
	Subtotal, first 230 institutions	101,339	60,201	37,291	3,847
231	Cleveland State University	73	51	20	2
232	Oregon Grad Inst of Science & Technology	73	34	39	0
233	Illinois State University	72	72	0	0
234	Southeastern Massachusetts University	70	41	29	0
235	Southern Illinois Univ at Edwardsville	69	31	38	0
236	University of Bridgeport	68	35	33	0
237	University of Nevada at Las Vegas	68	41	27	0
238	Calif Poly State Univ at San Luis Obispo	67	24	43	0
239	Moorhead State University	67	59	0	8
240	North Carolina A & T State University	67	39	28	0
	Subtotal, first 240 institutions	102,033	60,628	37,548	3,857
241	Loma Linda University	66	28	0	38
242	Yeshiva University	66	60	0	6
243	Calif State Polytechnic Univ at Pomona	64	52	12	0
244	Georgia State University	63	63	0	0
245	College of William and Mary	62	59	3	0
246	SUNY - Health Sci Ctr at Brooklyn	62	58	0	4
247	Univ of Texas SW Medical Ctr at Dallas	62	45	15	2
248	St Joseph's University	61	60	0	1
249	Manhattan College	60	0	60	0
250	St. Louis University	60	41	0	19
	Subtotal, first 250 institutions	102,659	61,094	37,638	3,927

See explanatory notes, if any, and SOURCE(S) at end of table.

Table A-14. Non-U.S. citizens enrolled in graduate programs in the science, engineering, and health fields in all U.S. institutions reporting non-U.S. citizens, ranked by non-U.S. citizen enrollment in surveyed fields: 1991

Institution and rank		All surveyed fields	Science fields	Engineering fields	Health fields
251	Prairie View A & M University	59	56	3	0
252	CUNY Hunter College	58	49	0	9
253	Medical College of Ohio at Toledo	58	0	0	58
254	Tennessee State University	57	18	39	0
255	University of Southern Mississippi	57	56	0	1
256	Calif State University at Chico	56	53	3	0
257	Texas Woman's University	56	35	0	21
258	Tuskegee University	56	40	12	4
259	University of Houston at Clear Lake City	55	47	6	2
260	Roosevelt University	54	54	0	0
	Subtotal, first 260 institutions	103,225	61,502	37,701	4,022
261	Miami University	51	45	5	1
262	Sam Houston State University	49	49	0	0
263	Pittsburg State University	48	19	29	0
264	University of Tennessee, Memphis	48	48	0	0
265	University of Nebraska Medical Center	46	20	0	26
266	Texas Southern University	45	45	0	0
267	Rockefeller University	44	44	0	0
268	Univ of Texas Hlth Sci Ctr San Antonio	44	31	0	13
269	CUNY Mt. Sinai Sch of Medicine	43	43	0	0
270	University of North Dakota	43	19	10	14
	Subtotal, first 270 institutions	103,686	61,865	37,745	4,076
271	Duquesne University	42	27	0	15
272	Southwest Texas State University	42	42	0	0
273	New Mexico Institute of Mining and Tech	41	22	19	0
274	Oakland University	41	17	24	0
275	Pepperdine University	41	41	0	0
276	Sangamon State University	41	41	0	0
277	University of Dayton	41	13	28	0
278	Wesleyan University	41	41	0	0
279	West Chester University of Pennsylvania	41	41	0	0
280	Northern Arizona University	40	38	0	2
	Subtotal, first 280 institutions	104,097	62,188	37,816	4,093
281	Baylor University	39	39	0	0
282	Calif Sch of Prof Psych-Berkeley/Alameda	39	39	0	0
283	Calif State University at Fresno	38	33	3	2
284	University of Puerto Rico - Rio Piedras	38	38	0	0
285	Alfred University	36	0	36	0
286	Maharishi International University	36	36	0	0
287	Middle Tennessee State University	36	36	0	0
288	National University	36	7	29	0
289	New York Medical College	36	26	0	10
290	US International University	36	36	0	0
	Subtotal, first 290 institutions	104,467	62,478	37,884	4,105
291	CUNY Queens College	35	33	0	2
292	Air Force Institute of Technology	34	9	25	0
293	University of Maryland Eastern Shore	34	34	0	0
294	Uniformed Serv Univ of the Hlth Science	33	22	0	11
295	University of Missouri - St Louis	33	33	0	0
296	Wake Forest University	33	33	0	0
297	Youngstown State University	33	13	20	0
298	CUNY College of Staten Island St George	32	32	0	0
299	Union Institute	32	29	0	3
300	Andrews University	31	23	0	8
	Subtotal, first 300 institutions	104,797	62,739	37,929	4,129

See explanatory notes, if any, and SOURCE(S) at end of table.

Table A-14. Non-U.S. citizens enrolled in graduate programs in the science, engineering, and health fields in all U.S. institutions reporting non-U.S. citizens, ranked by non-U.S. citizen enrollment in surveyed fields: 1991

Page 7 of 10

Institution and rank		All surveyed fields	Science fields	Engineering fields	Health fields
301	Oregon Health Sciences University	31	31	0	0
302	University of Tennessee at Chattanooga	30	11	19	0
303	Central Michigan University	29	29	0	0
304	Central Missouri State University	29	18	11	0
305	Medical College of Georgia	29	28	0	1
306	Widener University	29	0	29	0
307	East Stroudsburg Univ of Pennsylvania	28	28	0	0
308	Mass College of Pharmacy/Allied Health	28	17	0	11
309	Northeastern Illinois University	28	28	0	0
310	University of Northern Colorado	28	23	0	5
Subtotal, first 310 institutions		105,086	62,952	37,988	4,146
311	Dominican College of San Rafael	27	27	0	0
312	Hahnemann University	27	21	0	6
313	University of La Verne	27	27	0	0
314	University of the Pacific	27	8	2	17
315	Adelphi University	25	25	0	0
316	Fuller Theological Seminary	25	25	0	0
317	Hampton University	25	23	0	2
318	McNeese State University	25	18	7	0
319	University of Wisconsin - Stout	25	5	7	13
320	Eastern Washington University	24	24	0	0
Subtotal, first 320 institutions		105,343	63,155	38,004	4,184
321	Emporia State University - Kansas	24	24	0	0
322	University of San Francisco	24	24	0	0
323	Eastern Virginia Medical School	23	23	0	0
324	Idaho State University	23	13	5	5
325	Medical University of South Carolina	23	15	0	8
326	Rush University	23	22	0	1
327	Williams College	23	23	0	0
328	East Carolina University	22	21	0	1
329	The Hartford Graduate Center	22	16	6	0
330	Mayo Graduate School	21	20	0	1
Subtotal, first 330 institutions		105,571	63,356	38,015	4,200
331	Shippensburg University of Pennsylvania	21	21	0	0
332	University of South Dakota	21	21	0	0
333	Pacific States University	20	0	20	0
334	Texas Christian University	20	19	0	1
335	University of Arkansas - Med Sci Campus	20	15	0	5
336	University of Health Sciences (Chicago)	20	20	0	0
337	University of Texas at Tyler	20	20	0	0
338	West Texas State University	20	15	5	0
339	Eastern Illinois University	19	19	0	0
340	Montclair State College	19	19	0	0
Subtotal, first 340 institutions		105,771	63,525	38,040	4,206
341	Wagner College	19	13	0	6
342	Calif State Univ at Dominguez Hills	18	18	0	0
343	Hofstra University	18	15	0	3
344	Indiana University of Pennsylvania	18	18	0	0
345	Medical College of Wisconsin	18	18	0	0
346	The Medical College of Pennsylvania	18	18	0	0
347	Thomas Jefferson University	18	18	0	0
348	Marshall University	17	17	0	0
349	Seattle University	17	14	3	0
350	California University of Pennsylvania	16	16	0	0
Subtotal, first 350 institutions		105,948	63,690	38,043	4,215

See explanatory notes, if any, and SOURCE(S) at end of table.

Table A-14. Non-U.S. citizens enrolled in graduate programs in the science, engineering, and health fields in all U.S. institutions reporting non-U.S. citizens, ranked by non-U.S. citizen enrollment in surveyed fields: 1991

Institution and rank		All surveyed fields	Science fields	Engineering fields	Health fields
351	Arkansas State University	15	15	0	0
352	Montana College Mineral Sci & Technology	15	0	15	0
353	Morgan State University	15	15	0	0
354	SUNY - Health Sci Ctr at Syracuse	15	15	0	0
355	Teikyo Marycrest College	15	15	0	0
356	Western Washington University	15	15	0	0
357	Antioch University	14	14	0	0
358	Eastern Kentucky University	14	14	0	0
359	Eastern New Mexico University	14	14	0	0
360	Philadelphia Coll of Pharmacy and Science	14	7	0	7
Subtotal, first 360 institutions		106,094	63,814	38,058	4,222
361	Rose-Hulman Institute of Technology	14	5	9	0
362	University of Texas at San Antonio	14	14	0	0
363	West Virginia Institute of Technology	14	0	14	0
364	CUNY Herbert H. Lehman College	13	13	0	0
365	Bucknell University	12	4	8	0
366	Calif Sch of Prof Psych - Los Angeles	12	12	0	0
367	Jackson State University	12	12	0	0
368	Pace University	12	9	0	3
369	SUNY State College of Optometry	12	0	0	12
370	Biola University	11	11	0	0
Subtotal, first 370 institutions		106,220	63,894	38,089	4,237
371	Loyola College	11	10	1	0
372	Loyola Marymount University	11	4	7	0
373	Russell Sage College	11	6	0	5
374	Western Carolina University	11	11	0	0
375	Calif Sch of Prof Psych - Fresno	10	10	0	0
376	Calif State Univ at San Bernardino	10	8	0	2
377	Florida A & M University	10	5	0	5
378	New Mexico Highlands University	10	10	0	0
379	Towson State University	10	10	0	0
380	Union College(NY)	10	8	1	1
Subtotal, first 380 institutions		106,324	63,976	38,098	4,250
381	University of San Diego	10	9	0	1
382	University of Wisconsin - Oshkosh	10	8	0	2
383	Western Kentucky University	10	10	0	0
384	Chicago State University	9	9	0	0
385	Stephen F. Austin State University	9	9	0	0
386	University of Central Texas	9	9	0	0
387	University of Nebraska - Omaha	9	9	0	0
388	University of Scranton	9	9	0	0
389	Bryn Mawr College	8	8	0	0
390	Calif Sch of Prof Psych - San Diego	8	8	0	0
Subtotal, first 390 institutions		106,415	64,064	38,098	4,253
391	Creighton University	8	8	0	0
392	James Madison University	8	7	0	1
393	John Carroll University	8	8	0	0
394	Rand Graduate School of Policy Studies	8	8	0	0
395	Rivier College	8	8	0	0
396	Southwest Missouri State University	8	2	0	6
397	SUNY College at Brockport	8	8	0	0
398	SUNY College of Technology at Utica/Rome	8	8	0	0
399	University of Arkansas at Little Rock	8	7	0	1
400	Caribbean Center for Advanced Studies	7	7	0	0
Subtotal, first 400 institutions		106,494	64,135	38,098	4,261

See explanatory notes, if any, and SOURCE(S) at end of table.

Table A-14. Non-U.S. citizens enrolled in graduate programs in the science, engineering, and health fields in all U.S. institutions reporting non-U.S. citizens, ranked by non-U.S. citizen enrollment in surveyed fields: 1991

Page 9 of 10

Institution and rank	All surveyed fields	Science fields	Engineering fields	Health fields
401 Fisk University	7	7	0	0
402 Midwestern State University	7	7	0	0
403 Sonoma State University	7	7	0	0
404 Sul Ross State University	7	7	0	0
405 Albany Medical Center Graduate School	6	6	0	0
406 CUNY Bernard Baruch College	6	6	0	0
407 Edinboro University of Pennsylvania	6	4	0	2
408 Governors State University	6	3	0	3
409 Grand Valley State University	6	6	0	0
410 MGH Institute of Health Professions	6	0	0	6
Subtotal, first 410 institutions	106,558	64,188	38,098	4,272
411 Millersville University of Pennsylvania	6	1	5	0
412 Northern Michigan University	6	2	0	4
413 Appalachian State University	5	5	0	0
414 Meharry Medical College	5	5	0	0
415 Nova University	5	4	0	1
416 University of Hartford	5	4	0	1
417 University of Wisconsin - Platteville	5	1	4	0
418 Western New England College	5	0	5	0
419 Chicago School of Prof Psych	4	4	0	0
420 Emerson College	4	0	0	4
Subtotal, first 420 institutions	106,608	64,214	38,112	4,282
421 Golden Gate University	4	4	0	0
422 Mercer University	4	0	0	4
423 Niagara University	4	4	0	0
424 Seton Hall University	4	4	0	0
425 SUNY College at New Paltz	4	4	0	0
426 SUNY College at Oswego	4	4	0	0
427 Valdosta State College	4	4	0	0
428 West Georgia College	4	4	0	0
429 Xavier University	4	2	0	2
430 Baylor College of Dentistry	3	1	0	2
Subtotal, first 430 institutions	106,647	64,245	38,112	4,290
431 California State Univ - Bakersfield	3	3	0	0
432 Chapman College	3	2	0	1
433 Clarion University of Pennsylvania	3	3	0	0
434 Coppin State College	3	3	0	0
435 Forest Institute of Prof Psych	3	3	0	0
436 Georgia College	3	3	0	0
437 Hood College	3	3	0	0
438 Incarnate Word College	3	3	0	0
439 Lincoln University	3	3	0	0
440 Mount Holyoke College	3	3	0	0
Subtotal, first 440 institutions	106,677	64,274	38,112	4,291
441 Northeast Missouri State University	3	3	0	0
442 Northeastern State University	3	3	0	0
443 Pratt Institute	3	0	3	0
444 Sarah Lawrence College	3	3	0	0
445 St Mary's University of San Antonio	3	0	3	0
446 St. Cloud State University	3	2	0	1
447 Trinity University	3	0	0	3
448 University of Wisconsin - Green Bay	3	3	0	0
449 Xavier University	3	0	0	3
450 Assumption College	2	1	0	1
Subtotal, first 450 institutions	106,706	64,289	38,118	4,299

See explanatory notes, if any, and SOURCE(S) at end of table.

Table A-14. Non-U.S. citizens enrolled in graduate programs in the science, engineering, and health fields in all U.S. institutions reporting non-U.S. citizens, ranked by non-U.S. citizen enrollment in surveyed fields: 1991

Page 10 of 10

Institution and rank	All surveyed fields	Science fields	Engi-neering fields	Health fields
451 Bemidji State University	2	2	0	0
452 CUNY John Jay College of Crim Justice	2	2	0	0
453 Institute of Paper Science & Technology	2	0	2	0
454 Mansfield University of Pennsylvania	2	2	0	0
455 Radford University	2	2	0	0
456 Salem State College	2	0	0	2
457 Southeastern Louisiana University	2	2	0	0
458 Southern University A & M College	2	2	0	0
459 University of Baltimore	2	2	0	0
460 University of Northern Iowa	2	2	0	0
Subtotal, first 460 institutions	106,726	64,305	38,120	4,301
461 University of Puerto Rico Med Sci Campus	2	0	0	2
462 Wilkes University	2	0	2	0
463 Abilene Christian University	1	1	0	0
464 American International College	1	1	0	0
465 Angelo State University	1	1	0	0
466 Bloomsburg University of Pennsylvania	1	1	0	0
467 Bridgewater State College	1	1	0	0
468 College of New Rochelle	1	1	0	0
469 Connecticut College	1	1	0	0
470 Delaware State College	1	1	0	0
Subtotal, first 470 institutions	106,738	64,313	38,122	4,303
471 Gonzaga University	1	0	1	0
472 Iona College	1	1	0	0
473 Kearney State College	1	1	0	0
474 Mississippi University for Women	1	0	0	1
475 Northeast Louisiana University	1	1	0	0
476 Pacific Lutheran University	1	1	0	0
477 Quinnipiac College	1	0	0	1
478 Saint Martin's College	1	0	1	0
479 Smith College	1	1	0	0
480 Southeast Missouri State University	1	1	0	0
Subtotal, first 480 institutions	106,748	64,319	38,124	4,305
481 Southern Connecticut State University	1	1	0	0
482 St Bonaventure University	1	1	0	0
483 St. Joseph College	1	1	0	0
484 SUNY College at Fredonia	1	1	0	0
485 SUNY College at Plattsburgh	1	1	0	0
486 Tarleton State University	1	1	0	0
487 Troy State University at Montgomery	1	1	0	0
488 University of Charleston	1	1	0	0
489 University of Evansville	1	0	1	0
490 University of Portland	1	0	1	0
Subtotal, first 490 institutions	106,758	64,327	38,126	4,305
491 University of Richmond	1	1	0	0
492 University of Texas of the Permian Basin	1	0	1	0
493 University of Wisconsin - Eau Claire	1	1	0	0
494 University of Wisconsin - Stevens Point	1	1	0	0
495 Virginia State University	1	1	0	0
496 Winthrop College	1	1	0	0
Total, all institutions	106,764	64,332	38,127	4,305

NOTE: Includes medical schools.
SOURCE: National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

See explanatory notes, if any, and SOURCE(S) at end of table.

Table A-15. Number of bachelor's and master's degrees in science, engineering, and health fields awarded to all students and to nonresident aliens by all U.S. institutions: selected years, 1977-90

Page 1 of 2

Selected discipline divisions and year	Bachelor's			Master's		
	All students	Nonresident aliens	Percent of total	All students	Nonresident aliens	Percent of total
All Fields:						
1977	928,228	15,744	1.7	318,241	17,345	5.5
1979	931,340	17,853	1.9	302,075	19,427	6.4
1981	946,877	22,631	2.4	296,798	22,058	7.4
1985	990,877	29,258	3.0	287,213	26,952	9.4
1987	1,003,532	28,592	2.8	290,532	28,264	9.7
1989	1,030,171	26,457	2.6	311,050	32,123	10.3
1990	1,062,151	26,553	2.5	324,947	34,602	10.6
NSF-surveyed fields:						
1977	432,424	9,131	2.1	96,567	8,795	9.1
1979	436,154	10,639	2.4	95,422	9,745	10.2
1981	439,366	13,864	3.2	96,554	11,166	11.6
1985	406,492	14,886	3.7	95,231	13,897	14.6
1987	407,328	14,450	3.5	99,094	14,561	14.7
1989	398,539	13,061	3.3	103,910	16,920	16.3
1990	407,354	13,094	3.2	106,654	17,992	16.9
Science and engineering:						
1977	374,579	8,486	2.3	83,475	8,282	9.9
1979	373,431	10,039	2.7	79,785	9,111	11.4
1981	374,693	13,282	3.5	79,869	10,468	13.1
1985	355,253	14,249	4.0	80,630	13,132	16.3
1987	355,873	13,838	3.9	83,515	13,764	16.5
1989	351,150	12,479	3.6	87,783	15,949	18.2
1990	360,242	12,489	3.5	89,826	17,077	19.0
Engineering, total:						
1977	49,677	3,574	7.2	16,251	3,545	21.8
1979	62,800	4,764	7.6	15,510	3,960	25.5
1981	75,395	6,963	9.2	16,716	4,563	27.3
1985	77,571	6,190	8.0	20,935	5,694	27.2
1987	74,423	5,889	7.9	22,057	5,781	26.2
1989	66,947	5,072	7.6	23,735	6,747	28.4
1990	64,703	4,917	7.6	23,985	7,239	30.2
Sciences, total:						
1977	324,902	4,912	1.5	67,224	4,737	7.0
1979	310,631	5,275	1.7	64,275	5,151	8.0
1981	299,298	6,319	2.1	63,153	5,905	9.4
1985	277,682	8,059	2.9	59,695	7,438	12.5
1987	281,450	7,949	2.8	61,458	7,983	13.0
1989	284,203	7,407	2.6	64,048	9,202	14.4
1990	295,539	7,572	2.6	65,841	9,838	14.9
Physical sciences 1/:						
1977	22,618	571	2.5	5,345	656	12.3
1979	23,363	695	3.0	5,464	706	12.9
1981	24,175	732	3.0	5,300	786	14.8
1985	23,847	780	3.3	5,802	1,098	18.9
1987	20,155	635	3.2	5,638	1,056	18.7
1989	17,329	605	3.5	5,703	1,238	21.7
1990	16,203	595	3.7	5,411	1,364	25.2
Mathematical Sciences:						
1977	14,303	318	2.2	3,698	370	10.0
1979	11,901	365	3.1	3,046	472	15.5
1981	11,173	456	4.1	2,569	464	18.1
1985	15,267	763	5.0	2,888	685	23.7
1987	16,515	655	4.0	3,327	836	25.1
1989	15,314	543	3.5	3,430	976	28.5
1990	14,674	524	3.6	3,684	1,035	28.1

See explanatory notes, if any, and SOURCE(S) at end of table.

Table A-15. Number of bachelor's and master's degrees in science, engineering, and health fields awarded to all students and to nonresident aliens by all U.S. institutions: selected years, 1977-90

Page 2 of 2

Selected discipline divisions and year	Bachelor's			Master's		
	All students	Nonresident aliens	Percent of total	All students	Nonresident aliens	Percent of total
Computer science:						
1977	6,426	265	4.1	2,798	366	13.1
1979	8,769	376	4.3	3,055	465	15.2
1981	15,233	777	5.1	4,218	904	21.4
1985	39,121	2,116	5.4	7,101	1,709	24.1
1987	39,927	2,578	6.5	8,481	2,067	24.4
1989	30,963	2,135	6.9	9,399	2,442	26.0
1990	27,695	2,066	7.5	9,643	2,563	26.6
Agricultural sciences:						
1977	21,531	443	2.1	3,735	664	17.8
1979	23,247	479	2.1	4,007	725	18.1
1981	22,033	616	2.8	4,017	710	17.7
1985	12,418	437	3.5	3,152	606	19.2
1987	9,727	289	3.0	2,824	567	20.1
1989	8,795	266	3.0	2,604	630	24.2
1990	8,622	274	3.2	2,662	639	24.0
Biological Sciences:						
1977	54,193	1,028	1.9	7,154	477	6.7
1979	49,576	887	1.8	6,879	464	6.7
1981	44,046	903	2.1	6,015	368	6.1
1985	39,405	915	2.3	5,091	474	9.3
1987	39,047	862	2.2	4,999	509	10.2
1989	36,949	873	2.4	4,953	636	12.8
1990	38,040	867	2.3	4,893	729	14.9
Psychology:						
1977	47,794	469	1.0	8,320	171	2.1
1979	43,012	445	1.0	8,031	163	2.0
1981	41,364	486	1.2	8,039	270	3.4
1985	40,237	543	1.3	8,481	296	3.5
1987	43,195	494	1.1	8,165	220	2.7
1989	48,954	511	1.0	8,652	259	3.0
1990	54,018	525	1.0	9,308	385	4.1
Social Sciences:						
1977	158,037	1,818	1.2	36,174	2,033	5.6
1979	150,763	2,028	1.3	33,793	2,156	6.4
1981	141,274	2,349	1.7	32,995	2,403	7.3
1985	107,387	2,505	2.3	27,180	2,570	9.5
1987	112,884	2,436	2.2	28,024	2,728	9.7
1989	125,899	2,474	2.0	29,307	3,021	10.3
1990	136,287	2,721	2.0	30,240	3,123	10.3
Health fields:						
1977	57,845	645	1.1	13,092	513	3.9
1979	62,723	600	1.0	15,637	634	4.1
1981	64,673	582	0.9	16,685	698	4.2
1985	51,239	637	1.2	14,601	765	5.2
1987	51,455	612	1.2	15,579	797	5.1
1989	47,389	582	1.2	16,127	971	6.0
1990	47,112	605	1.3	16,828	915	5.4
Non-science & engineering:						
1977	495,804	6,613	1.3	221,674	8,550	3.9
1979	495,186	7,214	1.5	206,653	9,682	4.7
1981	507,511	8,767	1.7	200,244	10,892	5.4
1985	584,385	14,372	2.5	191,982	13,055	6.8
1987	596,204	14,142	2.4	191,438	13,703	7.2
1989	631,632	13,396	2.1	207,140	15,203	7.3
1990	654,797	13,459	2.1	218,293	16,610	7.6

1/ Includes earth, atmospheric, and ocean sciences.

NOTE: Nonresident aliens includes only non-U.S. citizens on temporary visas.

SOURCE: Biennial data from HEGIS Earned Degrees Surveys, 1977-85 and IPEDS Completions Survey, 1987, Department of Education, NCES.

Table A-16. **Number of science and engineering doctorates awarded by all U.S. institutions, by citizenship:** 1960-91

Year	Total	Number						Percent distribution				
		Citizenship known	United States	Non-U.S.			Citizenship unknown	Citizenship known	United States	Non-U.S.		
				Total	Permanent visas	Temporary visas				Total	Permanent visas	Temporary visas
1960	6,263	6,216	5,261	955	219	736	47	100.0	84.6	15.4	3.5	11.8
1961	6,721	6,630	5,584	1,046	200	846	91	100.0	84.2	15.8	3.0	12.8
1962	7,438	7,350	6,133	1,217	196	1,021	88	100.0	83.4	16.6	2.7	13.9
1963	8,219	8,087	6,794	1,293	279	1,014	132	100.0	84.0	16.0	3.4	12.5
1964	9,224	9,043	7,494	1,549	367	1,182	181	100.0	82.9	17.1	4.1	13.1
1965	10,476	10,321	8,460	1,861	436	1,425	155	100.0	82.0	18.0	4.2	13.8
1966	11,558	11,162	9,115	2,047	451	1,596	396	100.0	81.7	18.3	4.0	14.3
1967	13,097	12,733	10,384	2,349	679	1,670	364	100.0	81.6	18.4	5.3	13.1
1968	14,627	14,202	11,632	2,570	765	1,805	425	100.0	81.9	18.1	5.4	12.7
1969	16,277	15,716	12,908	2,808	938	1,870	561	100.0	82.1	17.9	6.0	11.9
1970	18,044	17,862	14,567	3,295	1,242	2,053	182	100.0	81.6	18.4	7.0	11.5
1971	19,363	19,083	15,465	3,618	1,491	2,127	280	100.0	81.0	19.0	7.8	11.1
1972	19,324	19,004	15,144	3,860	1,648	2,212	320	100.0	79.7	20.3	8.7	11.6
1973	19,352	19,015	14,971	4,044	1,579	2,465	337	100.0	78.7	21.3	8.3	13.0
1974	18,694	17,842	13,750	4,092	1,400	2,692	852	100.0	77.1	22.9	7.8	15.1
1975	18,710	18,344	14,288	4,056	1,269	2,787	366	100.0	77.9	22.1	6.9	15.2
1976	18,268	17,921	14,082	3,839	1,106	2,733	347	100.0	78.6	21.4	6.2	15.3
1977	17,723	17,287	13,636	3,651	990	2,661	436	100.0	78.9	21.1	5.7	15.4
1978	17,383	16,888	13,331	3,557	992	2,565	495	100.0	78.9	21.1	5.9	15.2
1979	17,589	17,126	13,524	3,602	945	2,657	463	100.0	79.0	21.0	5.5	15.5
1980	17,524	16,973	13,410	3,563	953	2,610	551	100.0	79.0	21.0	5.6	15.4
1981	17,996	17,399	13,544	3,855	893	2,962	597	100.0	77.8	22.2	5.1	17.0
1982	18,017	17,273	13,292	3,981	854	3,127	744	100.0	77.0	23.0	4.9	18.1
1983	18,393	17,701	13,403	4,298	898	3,400	692	100.0	75.7	24.3	5.1	19.2
1984	18,514	17,777	13,250	4,527	835	3,692	737	100.0	74.5	25.5	4.7	20.8
1985	18,712	17,904	12,947	4,957	929	4,028	808	100.0	72.3	27.7	5.2	22.5
1986	19,251	17,997	12,869	5,128	987	4,141	1,254	100.0	71.5	28.5	5.5	23.0
1987	19,706	18,355	12,819	5,536	1,086	4,450	1,351	100.0	69.8	30.2	5.9	24.2
1988	20,739	19,264	13,217	6,047	1,128	4,919	1,475	100.0	68.6	31.4	5.9	25.5
1989	21,530	19,811	13,312	6,499	1,121	5,378	1,719	100.0	67.2	32.8	5.7	27.1
1990	22,677	21,731	14,010	7,721	1,186	6,535	946	100.0	64.5	35.5	5.5	30.1
1991	23,748	22,427	13,923	8,504	1,252	7,252	1,321	100.0	62.1	37.9	5.6	32.3

SOURCE: National Science Foundation/SRS, Doctorate Records File

Table A-17. Number of science doctorates awarded by all U.S. institutions, by field and citizenship status: 1979-91

Page 1 of 3

Year and field	Total						Percent distribution				
				Non-U.S.					Non-U.S.		
	Total 1/	Citizen-ship known	United States	Total	Perma-nent visas	Tem-porary visas	Citizen-ship known	United States	Total	Perma-nent visas	Tem-porary visas
Science, total											
1979	15,095	14,692	12,230	2,462	622	1,840	100.0	83.2	16.8	4.2	12.5
1980	15,045	14,668	12,155	2,513	654	1,859	100.0	82.9	17.1	4.5	12.7
1981	15,468	14,986	12,374	2,612	592	2,020	100.0	82.6	17.4	4.0	13.5
1982	15,371	14,778	12,123	2,655	558	2,097	100.0	82.0	18.0	3.8	14.2
1983	15,612	15,049	12,240	2,809	579	2,230	100.0	81.3	18.7	3.8	14.8
1984	15,601	14,995	12,011	2,984	561	2,423	100.0	80.1	19.9	3.7	16.2
1985	15,546	14,891	11,668	3,223	614	2,609	100.0	78.4	21.6	4.1	17.5
1986	15,875	14,899	11,486	3,413	644	2,769	100.0	77.1	22.9	4.3	18.6
1987	15,994	14,910	11,261	3,649	731	2,918	100.0	75.5	24.5	4.9	19.6
1988	16,551	15,396	11,436	3,960	762	3,198	100.0	74.3	25.7	4.9	20.8
1989	16,986	15,641	11,448	4,193	756	3,437	100.0	73.2	26.8	4.8	22.0
1990	17,784	17,118	12,057	5,061	799	4,262	100.0	70.4	29.6	4.7	24.9
1991	18,536	17,596	11,946	5,650	871	4,779	100.0	67.9	32.1	4.9	27.2
Physical sciences											
1979	2,674	2,620	2,040	580	165	415	100.0	77.9	22.1	6.3	15.8
1980	2,521	2,461	1,884	577	151	426	100.0	76.6	23.4	6.1	17.3
1981	2,627	2,545	1,956	589	147	442	100.0	76.9	23.1	5.8	17.4
1982	2,694	2,616	1,991	625	119	506	100.0	76.1	23.9	4.5	19.3
1983	2,802	2,723	2,064	659	120	539	100.0	75.8	24.2	4.4	19.8
1984	2,845	2,754	2,071	683	119	564	100.0	75.2	24.8	4.3	20.5
1985	2,916	2,798	2,043	755	135	620	100.0	73.0	27.0	4.8	22.2
1986	3,090	2,905	2,014	891	133	758	100.0	69.3	30.7	4.6	26.1
1987	3,212	3,025	2,080	945	147	798	100.0	68.8	31.2	4.9	26.4
1988	3,317	3,101	2,100	1,001	136	865	100.0	67.7	32.3	4.4	27.9
1989	3,244	3,007	1,973	1,034	146	888	100.0	65.6	34.4	4.9	29.5
1990	3,492	3,381	2,149	1,232	167	1,065	100.0	63.6	36.4	4.9	31.5
1991	3,602	3,431	2,048	1,383	178	1,205	100.0	59.7	40.3	5.2	35.1
Earth, atmospheric, and ocean sciences											
1979	642	633	531	102	33	69	100.0	83.9	16.1	5.2	10.9
1980	628	618	512	106	26	80	100.0	82.8	17.2	4.2	12.9
1981	583	573	472	101	16	85	100.0	82.4	17.6	2.8	14.8
1982	657	638	528	110	29	81	100.0	82.8	17.2	4.5	12.7
1983	637	619	483	136	30	106	100.0	78.0	22.0	4.8	17.1
1984	614	605	474	131	25	106	100.0	78.3	21.7	4.1	17.5
1985	617	593	442	151	32	119	100.0	74.5	25.5	5.4	20.1
1986	589	552	422	130	24	106	100.0	76.4	23.6	4.3	19.2
1987	628	575	425	150	25	125	100.0	73.9	26.1	4.3	21.7
1988	728	679	511	168	31	137	100.0	75.3	24.7	4.6	20.2
1989	740	683	529	154	30	124	100.0	77.5	22.5	4.4	18.2
1990	769	733	535	198	23	175	100.0	73.0	27.0	3.1	23.9
1991	837	798	584	214	26	188	100.0	73.2	26.8	3.3	23.6

See explanatory notes, if any, and SOURCE(S) at end of table.

Table A-17. Number of science doctorates awarded by all U.S. institutions, by field and citizenship status: 1979-91

Page 2 of 3

Year and field	Total						Percent distribution				
	Total 1/	Citizenship known	United States	Non-U.S.			Citizenship known	United States	Non-U.S.		
				Total	Permanent visas	Temporary visas			Total	Permanent visas	Temporary visas
Mathematical sciences											
1979	769	752	552	200	51	149	100.0	73.4	26.6	6.8	19.8
1980	744	721	520	201	62	139	100.0	72.1	27.9	8.6	19.3
1981	728	711	482	229	43	186	100.0	67.8	32.2	6.0	26.2
1982	720	691	458	233	41	192	100.0	66.3	33.7	5.9	27.8
1983	701	666	411	255	46	209	100.0	61.7	38.3	6.9	31.4
1984	698	675	407	268	36	232	100.0	60.3	39.7	5.3	34.4
1985	688	656	376	280	42	238	100.0	57.3	42.7	6.4	36.3
1986	729	674	366	308	36	272	100.0	54.3	45.7	5.3	40.4
1987	740	698	345	353	51	302	100.0	49.4	50.6	7.3	43.3
1988	749	691	342	349	44	305	100.0	49.5	50.5	6.4	44.1
1989	859	774	393	381	35	346	100.0	50.8	49.2	4.5	44.7
1990	892	846	375	471	47	424	100.0	44.3	55.7	5.6	50.1
1991	1,040	974	439	535	55	480	100.0	45.1	54.9	5.6	49.3
Computer/information sciences											
1979	210	207	163	44	12	32	100.0	78.7	21.3	5.8	15.5
1980	218	212	156	56	13	43	100.0	73.6	26.4	6.1	20.3
1981	232	228	168	60	20	40	100.0	73.7	26.3	8.8	17.5
1982	220	214	143	71	12	59	100.0	66.8	33.2	5.6	27.6
1983	286	279	180	99	27	72	100.0	64.5	35.5	9.7	25.8
1984	295	284	178	106	17	89	100.0	62.7	37.3	6.0	31.3
1985	310	302	189	113	24	89	100.0	62.6	37.4	7.9	29.5
1986	399	372	202	170	47	123	100.0	54.3	45.7	12.6	33.1
1987	450	418	243	175	32	143	100.0	58.1	41.9	7.7	34.2
1988	515	502	284	218	42	176	100.0	56.6	43.4	8.4	35.1
1989	612	574	338	236	58	178	100.0	58.9	41.1	10.1	31.0
1990	705	674	348	326	55	271	100.0	51.6	48.4	8.2	40.2
1991	797	779	379	400	62	338	100.0	48.7	51.3	8.0	43.4
Agricultural sciences											
1979	855	838	544	294	29	265	100.0	64.9	35.1	3.5	31.6
1980	912	901	570	331	35	296	100.0	63.3	36.7	3.9	32.9
1981	982	954	594	360	35	325	100.0	62.3	37.7	3.7	34.1
1982	951	930	647	283	23	260	100.0	69.6	30.4	2.5	28.0
1983	1,015	992	649	343	36	307	100.0	65.4	34.6	3.6	30.9
1984	997	974	625	349	35	314	100.0	64.2	35.8	3.6	32.2
1985	1,111	1,081	683	398	43	355	100.0	63.2	36.8	4.0	32.8
1986	998	947	579	368	48	320	100.0	61.1	38.9	5.1	33.8
1987	976	921	584	337	48	289	100.0	63.4	36.6	5.2	31.4
1988	1,015	955	539	416	71	345	100.0	56.4	43.6	7.4	36.1
1989	1,088	1,008	607	401	45	356	100.0	60.2	39.8	4.5	35.3
1990	1,176	1,126	630	496	57	439	100.0	56.0	44.0	5.1	39.0
1991	1,072	1,031	551	480	56	424	100.0	53.4	46.6	5.4	41.1

See explanatory notes, if any, and SOURCE(S) at end of table.

Table A-17. Number of science doctorates awarded by all U.S. institutions, by field and citizenship status: 1979-91

Page 3 of 3

Year and field	Total						Percent distribution				
				Non-U.S.					Non-U.S.		
	Total 1/	Citizen-ship known	United States	Total	Perma-nent visas	Tem-porary visas	Citizen-ship known	United States	Total	Perma-nent visas	Tem-porary visas
Biological sciences											
1979	3,646	3,559	3,130	429	132	297	100.0	87.9	12.1	3.7	8.3
1980	3,803	3,726	3,279	447	151	296	100.0	88.0	12.0	4.1	7.9
1981	3,804	3,709	3,297	412	124	288	100.0	88.9	11.1	3.3	7.8
1982	3,893	3,777	3,317	460	117	343	100.0	87.8	12.2	3.1	9.1
1983	3,741	3,646	3,210	436	114	322	100.0	88.0	12.0	3.1	8.8
1984	3,880	3,760	3,285	475	114	361	100.0	87.4	12.6	3.0	9.6
1985	3,793	3,680	3,148	532	108	424	100.0	85.5	14.5	2.9	11.5
1986	3,807	3,632	3,124	508	117	391	100.0	86.0	14.0	3.2	10.8
1987	3,839	3,634	2,982	652	160	492	100.0	82.1	17.9	4.4	13.5
1988	4,112	3,880	3,131	749	192	557	100.0	80.7	19.3	4.9	14.4
1989	4,115	3,907	3,117	790	182	608	100.0	79.8	20.2	4.7	15.6
1990	4,331	4,235	3,192	1,043	189	854	100.0	75.4	24.6	4.5	20.2
1991	4,642	4,482	3,248	1,234	207	1,027	100.0	72.5	27.5	4.6	22.9
Psychology											
1979	3,091	2,968	2,850	118	45	73	100.0	96.0	4.0	1.5	2.5
1980	3,098	2,980	2,859	121	50	71	100.0	95.9	4.1	1.7	2.4
1981	3,358	3,238	3,111	127	47	80	100.0	96.1	3.9	1.5	2.5
1982	3,159	2,988	2,876	112	47	65	100.0	96.3	3.7	1.6	2.2
1983	3,347	3,187	3,044	143	64	79	100.0	95.5	4.5	2.0	2.5
1984	3,257	3,074	2,935	139	51	88	100.0	95.5	4.5	1.7	2.9
1985	3,117	2,945	2,805	140	59	81	100.0	95.2	4.8	2.0	2.8
1986	3,124	2,912	2,766	146	65	81	100.0	95.0	5.0	2.2	2.8
1987	3,169	2,891	2,747	144	59	85	100.0	95.0	5.0	2.0	2.9
1988	3,064	2,812	2,667	145	61	84	100.0	94.8	5.2	2.2	3.0
1989	3,203	2,844	2,684	160	54	106	100.0	94.4	5.6	1.9	3.7
1990	3,269	3,099	2,909	190	73	117	100.0	93.9	6.1	2.4	3.8
1991	3,240	2,977	2,796	181	60	121	100.0	93.9	6.1	2.0	4.1
Social sciences											
1979	3,208	3,115	2,420	695	155	540	100.0	77.7	22.3	5.0	17.3
1980	3,121	3,049	2,375	674	166	508	100.0	77.9	22.1	5.4	16.7
1981	3,154	3,028	2,294	734	160	574	100.0	75.8	24.2	5.3	19.0
1982	3,077	2,924	2,163	761	170	591	100.0	74.0	26.0	5.8	20.2
1983	3,083	2,937	2,199	738	142	596	100.0	74.9	25.1	4.8	20.3
1984	3,015	2,869	2,036	833	164	669	100.0	71.0	29.0	5.7	23.3
1985	2,994	2,836	1,982	854	171	683	100.0	69.9	30.1	6.0	24.1
1986	3,139	2,905	2,013	892	174	718	100.0	69.3	30.7	6.0	24.7
1987	2,980	2,749	1,856	893	209	684	100.0	67.5	32.5	7.6	24.9
1988	3,051	2,776	1,862	914	185	729	100.0	67.1	32.9	6.7	26.3
1989	3,125	2,844	1,807	1,037	206	831	100.0	63.5	36.5	7.2	29.2
1990	3,150	3,024	1,919	1,105	188	917	100.0	63.5	36.5	6.2	30.3
1991	3,306	3,124	1,901	1,223	227	996	100.0	60.9	39.1	7.3	31.9

1/ Total includes doctorates of unknown citizenship.

SOURCE: National Science Foundation/SRS, Doctorate Records File

Table A-18. Number of engineering doctorates awarded by all U.S. institutions, by field and citizenship status: 1979-91

Page 1 of 2

Year and subfield	Total						Percent distribution				
	Total 1/	Citizenship known	United States	Non-U.S.			Citizenship known	United States	Non-U.S.		
				Total	Permanent visas	Temporary visas			Total	Permanent visas	Temporary visas
Engineering, total 2/											
1979	2,494	2,434	1,294	1,140	323	817	100.0	53.2	46.8	13.3	33.6
1980	2,479	2,405	1,255	1,150	299	851	100.0	52.2	47.8	12.4	35.4
1981	2,528	2,413	1,170	1,243	301	942	100.0	48.5	51.5	12.5	39.0
1982	2,646	2,495	1,169	1,326	296	1,030	100.0	46.9	53.1	11.9	41.3
1983	2,781	2,652	1,163	1,489	319	1,170	100.0	43.9	56.1	12.0	44.1
1984	2,913	2,782	1,239	1,543	274	1,269	100.0	44.5	55.5	9.8	45.6
1985	3,166	3,013	1,279	1,734	315	1,419	100.0	42.4	57.6	10.5	47.1
1986	3,376	3,098	1,383	1,715	343	1,372	100.0	44.6	55.4	11.1	44.3
1987	3,712	3,445	1,558	1,887	355	1,532	100.0	45.2	54.8	10.3	44.5
1988	4,188	3,868	1,781	2,087	366	1,721	100.0	46.0	54.0	9.5	44.5
1989	4,544	4,170	1,864	2,306	365	1,941	100.0	44.7	55.3	8.8	46.5
1990	4,893	4,613	1,953	2,660	387	2,273	100.0	42.3	57.7	8.4	49.3
1991	5,212	4,831	1,977	2,854	381	2,473	100.0	40.9	59.1	7.9	51.2
Chemical engineering											
1979	287	283	139	144	46	98	100.0	49.1	50.9	16.3	34.6
1980	285	277	124	153	40	113	100.0	44.8	55.2	14.4	40.8
1981	296	283	128	155	43	112	100.0	45.2	54.8	15.2	39.6
1982	306	287	136	151	37	114	100.0	47.4	52.6	12.9	39.7
1983	349	338	162	176	38	138	100.0	47.9	52.1	11.2	40.8
1984	361	345	167	178	32	146	100.0	48.4	51.6	9.3	42.3
1985	440	429	218	211	39	172	100.0	50.8	49.2	9.1	40.1
1986	476	445	219	226	51	175	100.0	49.2	50.8	11.5	39.3
1987	527	510	280	230	48	182	100.0	54.9	45.1	9.4	35.7
1988	624	587	335	252	44	208	100.0	57.1	42.9	7.5	35.4
1989	625	597	352	245	55	190	100.0	59.0	41.0	9.2	31.8
1990	561	547	307	240	42	198	100.0	56.1	43.9	7.7	36.2
1991	620	598	316	282	44	238	100.0	52.8	47.2	7.4	39.8
Civil engineering											
1979	236	227	99	128	21	107	100.0	43.6	56.4	9.3	47.1
1980	240	234	98	136	24	112	100.0	41.9	58.1	10.3	47.9
1981	287	274	105	169	34	135	100.0	38.3	61.7	12.4	49.3
1982	308	295	110	185	27	158	100.0	37.3	62.7	9.2	53.6
1983	354	341	124	217	30	187	100.0	36.4	63.6	8.8	54.8
1984	351	331	124	207	40	167	100.0	37.5	62.5	12.1	50.5
1985	358	344	114	230	38	192	100.0	33.1	66.9	11.0	55.8
1986	387	356	122	234	45	189	100.0	34.3	65.7	12.6	53.1
1987	441	402	146	256	36	220	100.0	36.3	63.7	9.0	54.7
1988	489	462	168	294	44	250	100.0	36.4	63.6	9.5	54.1
1989	498	472	166	306	55	251	100.0	35.2	64.8	11.7	53.2
1990	505	477	156	321	59	262	100.0	32.7	67.3	12.4	54.9
1991	509	477	139	338	35	303	100.0	29.1	70.9	7.3	63.5

See explanatory notes, if any, and SOURCE(S) at end of table.

Table A-18. Number of engineering doctorates awarded by all U.S. institutions, by field and citizenship status: 1979-91

Page 2 of 2

Year and subfield	Total: Total 1/	Total: Citizenship known	Total: United States	Total: Non-U.S.: Total	Total: Non-U.S.: Permanent visas	Total: Non-U.S.: Temporary visas	Percent distribution: Citizenship known	Percent distribution: United States	Percent distribution: Non-U.S.: Total	Percent distribution: Non-U.S.: Permanent visas	Percent distribution: Non-U.S.: Temporary visas
Electrical engineering											
1979	533	520	295	225	78	147	100.0	56.7	43.3	15.0	28.3
1980	478	461	270	191	52	139	100.0	58.6	41.4	11.3	30.2
1981	478	453	246	207	58	149	100.0	54.3	45.7	12.8	32.9
1982	544	510	241	269	62	207	100.0	47.3	52.7	12.2	40.6
1983	517	488	218	270	69	201	100.0	44.7	55.3	14.1	41.2
1984	593	562	255	307	59	248	100.0	45.4	54.6	10.5	44.1
1985	631	586	247	339	65	274	100.0	42.2	57.8	11.1	46.8
1986	706	636	291	345	70	275	100.0	45.8	54.2	11.0	43.2
1987	691	615	291	324	60	264	100.0	47.3	52.7	9.8	42.9
1988	886	803	359	444	90	354	100.0	44.7	55.3	11.2	44.1
1989	995	901	394	507	84	423	100.0	43.7	56.3	9.3	46.9
1990	1,110	1,044	438	606	89	517	100.0	42.0	58.0	8.5	49.5
1991	1,206	1,132	465	667	113	554	100.0	41.1	58.9	10.0	48.9
Materials science											
1979	125	123	58	65	22	43	100.0	47.2	52.8	17.9	35.0
1980	143	139	68	71	19	52	100.0	48.9	51.1	13.7	37.4
1981	113	108	55	53	18	35	100.0	50.9	49.1	16.7	32.4
1982	147	130	63	67	13	54	100.0	48.5	51.5	10.0	41.5
1983	157	143	69	74	15	59	100.0	48.3	51.7	10.5	41.3
1984	168	167	76	91	17	74	100.0	45.5	54.5	10.2	44.3
1985	188	181	89	92	13	79	100.0	49.2	50.8	7.2	43.6
1986	187	176	82	94	19	75	100.0	46.6	53.4	10.8	42.6
1987	238	226	108	118	22	96	100.0	47.8	52.2	9.7	42.5
1988	252	237	119	118	19	99	100.0	50.2	49.8	8.0	41.8
1989	257	234	119	115	10	105	100.0	50.9	49.1	4.3	44.9
1990	307	292	126	166	16	150	100.0	43.2	56.8	5.5	51.4
1991	362	341	152	189	25	164	100.0	44.6	55.4	7.3	48.1
Mechanical engineering											
1979	366	361	192	169	50	119	100.0	53.2	46.8	13.9	33.0
1980	384	373	184	189	59	130	100.0	49.3	50.7	15.8	34.9
1981	360	346	158	188	44	144	100.0	45.7	54.3	12.7	41.6
1982	437	423	198	225	65	160	100.0	46.8	53.2	15.4	37.8
1983	379	365	145	220	47	173	100.0	39.7	60.3	12.9	47.4
1984	427	407	163	244	39	205	100.0	40.0	60.0	9.6	50.4
1985	513	490	193	297	58	239	100.0	39.4	60.6	11.8	48.8
1986	536	498	209	289	58	231	100.0	42.0	58.0	11.6	46.4
1987	657	611	241	370	67	303	100.0	39.4	60.6	11.0	49.6
1988	715	660	256	404	71	333	100.0	38.8	61.2	10.8	50.5
1989	760	683	259	424	66	358	100.0	37.9	62.1	9.7	52.4
1990	883	831	299	532	68	464	100.0	36.0	64.0	8.2	55.8
1991	874	795	279	516	59	457	100.0	35.1	64.9	7.4	57.5

1/ Total includes doctorates of unknown citizenship.
2/ Total includes engineering fields not shown separately.
SOURCE: National Science Foundation/SRS, Doctorate Records File

Table A-19. Percent of science and engineering doctorates awarded to women by all U.S. institutions, by field and citizenship status: 1991

Field	U.S. citizens			Non-U.S. citizens								
				Total			Permanent visas			Temporary visas		
	Total number	Number of women	Percent women	Total number	Number of women	Percent women	Total number	Number of women	Percent women	Total number	Number of women	Percent women
Total	13,923	4,953	35.6	8,504	1,513	17.8	1,252	347	27.7	7,252	1,166	16.1
Sciences, total	11,946	4,686	39.2	5,650	1,340	23.7	871	311	35.7	4,779	1,029	21.5
Physical sciences	2,048	400	19.5	1,383	242	17.5	178	42	23.6	1,205	200	16.6
Earth, atmospheric, & ocean sciences	584	143	24.5	214	31	14.5	26	9	34.6	188	22	11.7
Mathematical sciences	439	88	20.0	535	100	18.7	55	19	34.5	480	81	16.9
Computer sciences	379	81	21.4	400	34	8.5	62	11	17.7	338	23	6.8
Agricultural sciences	551	124	22.5	480	77	16.0	56	9	16.1	424	68	16.0
Biological sciences	3,248	1,261	38.8	1,234	451	36.5	207	99	47.8	1,027	352	34.3
Psychology	2,796	1,752	62.7	181	91	50.3	60	40	66.7	121	51	42.1
Social sciences	1,901	837	44.0	1,223	314	25.7	227	82	36.1	996	232	23.3
Engineering, total	1,977	267	13.5	2,854	173	6.1	381	36	9.4	2,473	137	5.5
Chemical engineering	316	46	14.6	282	25	8.9	44	8	18.2	238	17	7.1
Electrical engineering	465	32	6.9	667	29	4.3	113	3	2.7	554	26	4.7
Mechanical engineering	252	33	13.1	445	23	5.2	51	3	5.9	394	20	5.1
All other engineering	944	156	16.5	1,460	96	6.6	173	22	12.7	1,287	74	5.7

SOURCE: National Science Foundation/SRS, Doctorate Records File

Table A-20. Country of citizenship of non-U.S. citizens awarded science and engineering doctorates by visa type: 1979-91

Page 1 of 9

Country of citizenship	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Total, non-U.S. citizens:													
Science and engineering ..	3,602	3,663	3,855	3,981	4,298	4,527	4,957	5,128	5,536	6,047	6,499	7,721	8,504
Canada	130	155	158	148	179	173	152	177	181	203	220	251	276
Mexico & Ctrl. America .	90	71	97	89	126	105	120	122	114	124	154	156	169
Mexico	73	57	75	70	96	76	101	97	86	92	120	103	126
Cuba & Islands	18	21	23	20	22	32	32	29	23	28	29	36	51
South America	261	268	292	240	269	276	254	300	311	295	297	339	372
Argentina	22	25	27	24	34	41	32	40	28	38	43	66	60
Brazil	114	123	135	93	101	108	83	96	112	94	100	98	114
Chile	38	26	34	28	35	31	41	44	45	45	47	50	52
Colombia	19	22	19	27	25	32	22	24	27	46	27	40	48
Europe	384	359	405	417	454	466	491	559	623	689	709	796	929
Belgium	15	11	20	15	15	17	19	20	16	21	15	31	43
England	97	87	100	90	87	100	103	76	94	115	96	99	125
France................	42	16	25	40	33	48	28	34	48	53	51	64	65
Germany 1/	28	27	35	36	43	39	48	62	74	78	102	122	114
Greece	61	63	64	60	66	78	68	103	123	118	137	125	158
Italy	12	15	17	23	30	35	45	48	46	63	56	63	81
East Asia	884	848	886	1,067	1,191	1,348	1,553	1,660	1,968	2,237	2,555	3,592	4,298
China, Rep. (Taiwan) .	363	423	444	560	604	664	743	707	787	786	854	1,009	1,082
China, PR	--	2	--	3	13	60	137	198	290	478	610	1,017	1,596
China, unspecified ...	41	3	1	3	--	2	3	2	9	5	14	149	141
Hong Kong	90	92	100	92	98	87	94	73	87	81	93	94	115
Japan	95	69	77	88	103	102	97	108	83	103	105	147	120
Korea	139	131	135	172	236	266	323	398	547	620	750	970	1,067
Thailand	103	76	83	92	88	108	96	108	95	96	76	111	88
West Asia	853	905	926	1,015	1,141	1,180	1,188	1,206	1,222	1,225	1,306	1,638	1,574
India	368	371	379	357	383	437	458	469	503	520	537	705	719
Iran	137	205	194	247	278	287	233	213	182	172	198	257	211
Iraq	19	27	27	26	43	26	41	27	43	36	25	27	21
Israel	91	66	94	82	109	78	66	79	66	61	68	74	85
Lebanon	23	19	19	21	24	28	26	28	43	39	51	45	53
Turkey	60	65	49	68	68	72	84	84	36	81	78	105	94
Pakistan	36	42	26	43	38	37	46	59	59	52	61	76	90
Australasia	127	120	129	146	159	157	147	148	135	155	166	173	200
Australia	40	45	36	46	50	51	39	34	42	39	41	45	33
Indonesia	30	20	39	34	47	37	42	40	42	42	52	53	62
New Zealand	20	24	14	19	18	16	19	17	14	17	27	16	21
Philippines	37	30	40	47	44	51	45	57	35	56	45	58	84
Africa	276	319	383	391	426	452	501	448	405	449	444	536	473
Egypt	47	74	79	83	93	90	107	100	98	115	109	159	109
Nigeria	68	88	129	98	106	94	117	79	89	87	58	82	77
Country unknown	579	597	556	448	331	338	519	479	554	642	619	204	162

See explanatory notes, if any, and SOURCE(S) at end of table.

Table A-20. Country of citizenship of non-U.S. citizens awarded science and engineering doctorates by visa type: 1979-91

Page 2 of 9

Country of citizenship	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Non-U.S. citizens, cont.													
Sciences, total	2,462	2,513	2,612	2,655	2,809	2,984	3,223	3,413	3,649	3,960	4,193	5,061	5,650
Canada	118	135	141	130	156	151	130	159	152	175	182	211	225
Mexico & Ctrl. America	66	54	73	72	92	83	93	97	87	91	121	120	143
Mexico	53	44	54	57	67	57	77	77	65	65	92	78	105
Cuba & Islands	15	19	23	17	13	27	25	23	17	26	24	29	48
South America	200	216	218	175	193	214	201	237	232	226	224	255	291
Argentina	14	15	21	19	26	31	21	30	19	32	37	54	48
Brazil	85	99	99	64	75	81	68	79	74	69	70	67	82
Chile	36	23	24	21	24	29	35	36	35	36	38	39	44
Colombia	15	19	16	23	20	21	18	20	20	37	22	32	37
Europe	288	271	302	304	334	357	380	411	471	518	511	591	744
Belgium	9	7	15	8	8	11	10	16	10	15	10	19	34
England	86	68	84	74	77	88	97	64	85	104	82	85	115
France	27	10	17	28	19	31	17	21	32	31	33	37	46
Germany 1/	21	22	27	30	40	37	41	52	67	67	85	107	107
Greece	39	41	36	37	34	43	38	54	62	60	67	68	96
Italy	11	13	15	18	23	25	38	40	36	56	41	49	69
East Asia	588	544	524	645	710	766	887	978	1,165	1,348	1,567	2,328	2,755
China, Rep. (Taiwan)	230	251	226	303	327	342	356	356	389	386	427	535	509
China, PR	--	1	--	3	8	33	89	143	206	345	454	728	1,181
China, unspecified	24	3	--	1	--	2	3	--	6	4	6	104	104
Hong Kong	66	63	71	60	68	57	66	46	65	48	55	64	87
Japan	69	42	46	57	72	64	72	80	68	79	86	130	92
Korea	85	90	85	109	132	151	190	223	309	363	442	611	655
Thailand	67	56	60	67	61	72	71	82	75	72	60	90	70
West Asia	502	548	554	603	650	716	674	736	745	693	728	901	849
India	198	187	203	197	205	243	246	265	299	265	285	392	381
Iran	81	126	120	148	140	168	117	113	94	91	88	118	97
Iraq	15	21	23	22	36	20	35	23	33	28	16	13	13
Israel	59	45	61	57	64	56	44	55	47	38	49	55	59
Lebanon	18	13	11	13	11	13	15	17	16	21	26	10	16
Turkey	26	34	19	25	32	31	28	35	43	39	26	47	33
Pakistan	24	34	18	30	25	27	28	36	42	32	46	50	58
Australasia	109	106	118	125	136	128	119	127	111	131	140	148	160
Australia	34	41	32	42	42	46	35	28	37	37	39	42	26
Indonesia	24	16	35	27	38	26	27	31	29	31	40	39	45
New Zealand	18	20	14	13	18	12	15	16	12	13	24	14	19
Philippines	33	28	37	43	38	42	40	52	31	49	36	52	70
Africa	199	223	279	293	301	313	364	330	298	311	304	349	324
Egypt	19	35	38	45	50	45	59	47	58	68	60	77	54
Nigeria	51	68	98	82	77	64	88	64	73	66	47	59	59
Country unknown	377	397	380	291	224	229	350	315	371	441	392	129	111

See explanatory notes, if any, and SOURCE(S) at end of table.

Table A-20. Country of citizenship of non-U.S. citizens awarded science and engineering doctorates
by visa type: 1979-91

Page 3 of 9

Country of citizenship	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Non-U.S. citizens, cont.													
Engineering, total	1,140	1,150	1,243	1,326	1,489	1,543	1,734	1,715	1,887	2,087	2,306	2,660	2,854
Canada	12	20	17	18	23	22	22	18	29	28	38	40	51
Mexico & Ctrl. America .	24	17	24	17	34	22	27	25	27	33	33	36	26
Mexico	20	13	21	13	29	19	24	20	21	27	28	25	21
Cuba & Islands	3	2	--	3	9	5	7	6	6	2	5	7	3
South America	61	52	74	65	76	62	53	63	79	69	73	84	81
Argentina	8	10	6	5	8	10	11	10	9	6	6	12	12
Brazil	29	24	36	29	26	27	15	17	38	25	30	31	32
Chile	2	3	10	7	11	2	6	8	10	9	9	11	8
Colombia	4	3	3	4	5	11	4	4	7	9	5	8	11
Europe	96	88	103	113	120	109	111	148	152	171	198	205	185
Belgium	6	4	5	7	7	6	9	4	6	6	5	12	9
England	11	19	16	16	10	12	6	12	9	11	14	14	10
France................	15	6	8	12	14	17	11	13	16	22	18	27	19
Germany 1/	7	5	8	6	3	2	7	10	7	11	17	15	7
Greece	22	22	28	23	32	35	30	49	61	58	70	57	62
Italy	1	2	2	5	7	10	7	8	10	7	15	14	12
East Asia	296	304	362	422	481	582	666	682	803	889	988	1,264	1,543
China, Rep. (Taiwan) .	133	172	218	257	277	322	387	351	398	400	427	474	573
China, PR	--	1	--	--	5	27	48	55	84	133	156	289	415
China, unspecified ...	17	--	1	2	--	--	--	2	3	1	8	45	37
Hong Kong	24	29	29	32	30	30	28	27	22	33	38	30	28
Japan	26	27	31	31	31	38	25	28	15	24	19	17	28
Korea	54	41	50	63	104	115	133	175	238	257	308	359	412
Thailand	36	20	23	25	27	36	25	26	20	24	16	21	18
West Asia	351	357	372	412	491	464	514	470	477	532	578	737	725
India	170	184	176	160	178	194	212	204	204	255	252	313	338
Iran	56	79	74	99	138	119	116	100	88	81	110	139	114
Iraq	4	6	4	4	7	6	6	4	10	8	9	14	8
Israel	32	21	33	25	45	22	22	24	19	23	19	19	26
Lebanon	5	6	8	8	13	15	11	11	27	18	25	35	37
Turkey	34	31	30	43	36	41	56	49	43	42	52	58	61
Pakistan	12	8	8	13	13	10	18	23	17	20	15	26	32
Australasia	18	14	11	21	23	29	28	21	24	24	26	25	40
Australia	6	4	4	4	8	5	4	6	5	2	2	3	7
Indonesia	6	4	4	7	9	11	15	9	13	11	12	14	17
New Zealand	2	4	--	6	--	4	4	1	2	4	3	2	2
Philippines	4	2	3	4	6	9	5	5	4	7	9	6	14
Africa	77	96	104	98	125	139	137	118	107	138	140	187	149
Egypt	28	39	41	38	43	45	48	53	40	47	49	82	55
Nigeria	17	20	31	16	29	30	29	15	16	21	11	23	18
Country unknown	202	200	176	157	107	109	169	164	183	201	227	75	51

See explanatory notes, if any, and SOURCE(S) at end of table.

Table A-20. Country of citizenship of non-U.S. citizens awarded science and engineering doctorates by visa type: 1979-91

Page 4 of 9

Country of citizenship	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Permanent visas:													
Science and engineering ..	945	953	893	854	898	835	929	987	1,086	1,128	1,121	1,186	1,252
Canada	29	32	34	31	45	35	29	48	40	53	55	55	71
Mexico & Ctrl. America .	10	5	5	14	18	17	12	18	16	19	25	27	30
Mexico	8	3	4	7	11	8	10	11	10	15	16	16	21
Cuba & Islands	8	11	9	9	13	13	18	14	6	15	8	16	18
South America	33	26	31	23	33	22	26	48	44	49	41	66	61
Argentina	5	3	4	3	8	2	2	6	4	8	4	11	15
Brazil	4	4	7	4	7	2	4	5	9	5	9	12	8
Chile	7	4	6	3	3	3	6	11	7	5	6	7	6
Colombia	4	5	1	3	5	5	4	4	5	14	7	11	11
Europe	94	109	100	98	140	110	131	142	150	170	159	178	205
Belgium	1	2	3	1	2	3	3	6	2	4	3	6	8
England	40	32	33	30	40	40	43	32	30	45	36	37	50
France................	7	5	6	6	11	8	7	6	11	11	14	15	12
Germany 1/	13	11	9	11	12	11	19	22	29	22	24	38	25
Greece	11	12	16	11	17	16	21	24	30	21	25	24	28
Italy	3	5	4	5	5	4	11	5	10	9	11	5	16
East Asia	231	229	186	207	233	215	255	243	260	250	264	320	401
China, Rep. (Taiwan) .	128	144	121	122	141	126	158	144	151	136	142	146	158
China, PR	--	1	--	--	--	2	6	7	20	26	34	48	87
China, unspecified ...	14	1	1	1	--	1	1	--	2	1	3	8	15
Hong Kong	25	21	12	18	18	23	17	14	19	15	15	12	16
Japan	11	6	6	11	11	10	8	11	10	10	13	23	20
Korea	34	34	28	36	45	38	47	46	36	49	52	69	87
Thailand	6	8	6	7	9	11	6	10	13	5	4	2	8
West Asia	144	133	134	142	206	199	205	227	261	244	279	343	280
India	70	63	67	57	75	67	74	70	87	84	94	117	105
Iran	23	31	28	35	67	73	72	77	79	77	93	124	80
Iraq	1	--	1	1	4	1	3	2	8	8	2	3	3
Israel	13	12	15	11	22	16	9	16	20	14	19	10	18
Lebanon	6	4	5	2	5	6	7	8	15	10	14	18	10
Turkey	8	7	5	10	10	15	12	21	12	15	11	17	11
Pakistan	6	3	3	11	8	9	6	9	12	5	5	7	11
Australasia	17	16	14	15	13	26	16	21	27	29	19	25	33
Australia	9	9	3	9	8	14	7	12	13	11	8	12	9
Indonesia	1	--	3	--	1	2	1	1	5	5	5	3	9
New Zealand	4	6	1	3	1	2	1	1	4	6	1	4	4
Philippines	3	1	7	3	3	7	7	7	4	7	5	6	11
Africa	20	30	27	40	41	53	78	62	69	81	79	90	100
Egypt	5	9	5	10	11	12	15	12	9	18	13	14	13
Nigeria	1	11	10	14	12	15	30	20	26	25	19	29	34
Country unknown	359	362	353	275	156	145	159	164	213	218	192	66	53

See explanatory notes, if any, and SOURCE(S) at end of table.

Table A-20. Country of citizenship of non-U.S. citizens awarded science and engineering doctorates by visa type: 1979-91

Country of citizenship	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Permanent visas, cont.:													
Sciences, total	622	654	592	558	579	561	614	644	731	762	756	799	871
Canada	27	28	30	29	40	32	27	46	37	45	46	46	57
Mexico & Ctrl. America .	7	3	5	11	16	11	9	15	12	12	22	20	27
Mexico	5	2	4	5	9	2	7	10	7	10	13	12	20
Cuba & Islands	8	11	9	7	6	13	15	13	5	14	8	12	18
South America	29	22	26	15	22	16	23	40	33	37	34	54	49
Argentina	5	3	3	2	7	2	2	6	3	8	4	9	10
Brazil	3	4	7	2	4	1	4	3	4	5	8	10	6
Chile	7	4	6	1	2	3	5	10	5	4	5	7	6
Colombia	4	4	1	2	2	3	4	4	5	9	5	10	10
Europe	80	86	75	78	113	88	105	103	118	142	129	147	173
Belgium	--	1	3	1	--	2	2	4	2	2	3	5	7
England	37	24	27	25	36	35	40	29	26	40	31	32	48
France................	5	3	5	6	7	5	6	4	8	9	12	9	8
Germany 1/	11	9	7	11	12	11	18	17	27	21	21	34	25
Greece	8	7	7	6	10	10	9	11	15	15	16	19	17
Italy	3	5	2	4	4	3	10	4	6	7	8	5	13
East Asia	140	144	104	118	136	116	135	127	145	138	159	193	236
China, Rep. (Taiwan) .	76	92	64	66	73	67	70	66	74	65	75	78	71
China, PR	--	1	--	--	--	--	5	5	13	16	26	30	64
China, unspecified ...	8	1	--	--	--	1	1	--	--	1	1	4	12
Hong Kong	16	14	10	10	12	13	13	8	10	10	10	7	9
Japan	10	5	3	9	7	8	7	7	8	8	12	22	15
Korea	15	23	16	21	28	18	28	27	22	27	30	39	51
Thailand	5	3	3	4	8	7	2	7	12	5	4	2	7
West Asia	83	77	75	84	103	117	114	134	163	139	157	194	166
India	42	30	32	32	40	38	40	41	58	48	59	76	63
Iran	12	20	17	22	25	41	35	44	39	38	38	63	39
Iraq	--	--	1	--	2	1	3	2	7	5	1	2	3
Israel	10	12	10	8	13	14	7	10	16	8	17	7	14
Lebanon	4	2	3	--	3	1	4	5	5	3	7	5	6
Turkey	4	--	2	3	5	6	7	10	5	7	6	7	6
Pakistan	3	3	2	8	4	6	1	5	8	4	2	5	9
Australasia	14	16	11	13	12	23	15	18	21	23	16	20	28
Australia	6	9	2	7	8	13	6	10	10	10	8	12	7
Indonesia	1	--	2	--	--	1	1	1	3	2	3	--	6
New Zealand	4	6	1	3	1	1	1	1	3	4	1	3	4
Philippines	3	1	6	3	3	7	7	6	4	7	4	5	11
Africa	12	22	22	26	23	42	57	43	57	64	62	69	75
Egypt	1	4	1	2	5	6	9	5	7	14	9	7	9
Nigeria	1	10	9	11	7	12	22	15	21	18	16	24	25
Country unknown	222	245	235	177	108	103	114	105	140	148	123	44	42

See explanatory notes, if any, and SOURCE(S) at end of table.

Table A-20. Country of citizenship of non-U.S. citizens awarded science and engineering doctorates by visa type: 1979-91

Country of citizenship	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Permanent visas, cont.:													
Engineering, total	323	299	301	296	319	274	315	343	355	366	365	387	381
Canada	2	4	4	2	5	3	2	2	3	8	9	9	14
Mexico & Ctrl. America .	3	2	--	3	2	6	3	3	4	7	3	7	3
Mexico	3	1	--	2	2	6	3	1	3	5	3	4	1
Cuba & Islands	--	--	--	2	7	--	3	1	1	1	--	4	--
South America	4	4	5	8	11	6	3	8	11	12	7	12	12
Argentina	--	--	1	1	1	--	--	--	1	--	--	2	5
Brazil	1	--	--	2	3	1	--	2	5	--	1	2	2
Chile	--	--	--	2	1	--	1	1	2	1	1	--	--
Colombia	--	1	--	1	3	2	--	--	--	5	2	1	1
Europe	14	23	25	20	27	22	26	39	32	28	30	31	32
Belgium	1	1	--	--	2	1	1	2	--	2	--	1	1
England	3	8	6	5	4	5	3	3	4	5	5	5	2
France................	2	2	1	--	4	3	1	2	3	2	2	6	4
Germany 1/	2	2	2	--	--	--	1	5	2	1	3	4	--
Greece	3	5	9	5	7	6	12	13	15	6	9	5	11
Italy	--	--	2	1	1	1	1	1	4	2	3	--	3
East Asia	91	85	82	89	97	99	120	116	115	112	105	127	165
China, Rep. (Taiwan) .	52	52	57	56	68	59	88	78	77	71	67	68	87
China, PR	--	--	--	--	--	2	1	2	7	10	8	18	23
China, unspecified ...	6	--	1	1	--	--	--	--	2	--	2	4	3
Hong Kong	9	7	2	8	6	10	4	6	9	5	5	5	7
Japan	1	1	3	2	4	2	1	4	2	2	1	1	5
Korea	19	11	12	15	17	20	19	19	14	22	22	30	36
Thailand	3	5	3	3	1	4	4	3	1	--	--	--	1
West Asia	61	56	59	58	103	82	91	93	98	105	122	149	114
India	28	33	35	25	35	29	34	29	29	36	35	41	42
Iran	11	11	11	13	42	32	37	33	40	39	55	61	41
Iraq	1	--	--	1	2	--	--	--	1	3	1	1	--
Israel	3	--	5	3	9	2	2	6	4	6	2	3	4
Lebanon	2	2	2	2	2	5	3	3	10	7	7	13	4
Turkey	4	7	3	7	5	9	5	11	7	8	5	10	5
Pakistan	3	--	1	3	4	3	5	4	4	1	3	2	2
Australasia	3	--	3	2	1	3	1	3	6	6	3	5	5
Australia	3	--	1	2	--	1	1	2	3	1	--	--	2
Indonesia	--	--	1	--	1	1	--	--	2	3	2	3	3
New Zealand	--	--	--	--	--	1	--	--	1	2	--	1	--
Philippines	--	--	1	--	--	--	--	1	--	--	1	1	--
Africa	8	8	5	14	18	11	21	19	12	17	17	21	25
Egypt	4	5	4	8	6	6	6	7	2	4	4	7	4
Nigeria	--	1	1	3	5	3	8	5	5	7	3	5	9
Country unknown	137	117	118	98	48	42	45	59	73	70	69	22	11

See explanatory notes, if any, and SOURCE(S) at end of table.

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Table A-20. Country of citizenship of non-U.S. citizens awarded science and engineering doctorates by visa type: 1979-91

Country of citizenship	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Temporary visas:													
Science and engineering ..	2,657	2,710	2,962	3,127	3,400	3,692	4,028	4,141	4,450	4,919	5,378	6,535	7,252
Canada	101	123	124	117	134	138	123	129	141	150	165	196	205
Mexico & Ctrl. America .	80	66	92	75	108	88	108	104	98	105	129	129	139
Mexico	65	54	71	63	85	68	91	86	76	77	104	87	105
Cuba & Islands	10	10	14	11	9	19	14	15	17	13	21	20	33
South America	228	242	261	217	236	254	228	252	267	246	256	273	311
Argentina	17	22	23	21	26	39	30	34	24	30	39	55	45
Brazil	110	119	128	89	94	106	79	91	103	89	91	86	106
Chile	31	22	28	25	32	28	35	33	38	40	41	43	46
Colombia	15	17	18	24	20	27	18	20	22	32	20	29	37
Europe	290	250	305	319	314	356	360	417	473	519	550	618	724
Belgium	14	9	17	14	13	14	16	14	14	17	12	25	35
England	57	55	67	60	47	60	60	44	64	70	60	62	75
France................	35	11	19	34	22	40	21	28	37	42	37	49	53
Germany 1/	15	16	26	25	31	28	29	40	45	56	78	84	89
Greece	50	51	48	49	49	62	47	79	93	97	112	101	130
Italy	9	10	13	18	25	31	34	43	36	54	45	58	65
East Asia	653	619	700	860	958	1,133	1,298	1,417	1,708	1,987	2,291	3,272	3,897
China, Rep. (Taiwan) .	235	279	323	438	463	538	585	563	636	650	712	863	924
China, PR	--	1	--	3	13	58	131	191	270	452	576	969	1,509
China, unspecified ...	27	2	--	2	--	1	2	2	7	4	11	141	126
Hong Kong	65	71	88	74	80	64	77	59	68	66	78	82	99
Japan	84	63	71	77	92	92	89	97	73	93	92	124	100
Korea	105	97	107	136	191	228	276	352	511	571	698	901	980
Thailand	95	68	77	85	79	97	90	98	82	91	72	109	80
West Asia	709	772	792	873	935	981	983	979	961	981	1,027	1,295	1,294
India	298	308	312	300	308	370	384	399	416	436	443	588	614
Iran	114	174	166	212	211	214	161	136	103	95	105	133	131
Iraq	18	27	26	25	39	25	38	25	35	28	23	24	18
Israel	78	54	79	71	87	62	57	63	46	47	49	64	67
Lebanon	17	15	14	19	19	22	19	20	28	29	37	27	43
Turkey	52	58	44	58	58	57	72	63	74	66	67	88	83
Pakistan	30	39	23	32	30	28	40	50	47	47	56	69	79
Australasia	110	104	115	131	146	131	131	127	108	126	147	148	167
Australia	31	36	33	37	42	37	32	22	29	28	33	33	24
Indonesia	29	20	36	34	46	35	41	39	37	37	47	50	53
New Zealand	16	18	13	16	17	14	18	16	10	11	26	12	17
Philippines	34	29	33	44	41	44	38	50	31	49	40	52	73
Africa	256	289	356	351	385	399	423	386	336	368	365	446	373
Egypt	42	65	74	73	82	78	92	88	89	97	96	145	96
Nigeria	67	77	119	84	94	79	87	59	63	62	39	53	43
Country unknown	220	235	203	173	175	193	360	315	341	424	427	138	109

See explanatory notes, if any, and SOURCE(S) at end of table.

Table A-20. Country of citizenship of non-U.S. citizens awarded science and engineering doctorates by visa type: 1979-91

Country of citizenship	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Temporary visas, cont.													
Sciences, total	1,840	1,859	2,020	2,097	2,230	2,423	2,609	2,769	2,918	3,198	3,437	4,262	4,779
Canada	91	107	111	101	116	119	103	113	115	130	136	165	168
Mexico & Ctrl. America .	59	51	68	61	76	72	84	82	75	79	99	100	116
Mexico	48	42	50	52	58	55	70	67	58	55	79	66	85
Cuba & Islands	7	8	14	10	7	14	10	10	12	12	16	17	30
South America	171	194	192	160	171	198	178	197	199	189	190	201	242
Argentina	9	12	18	17	19	29	19	24	16	24	33	45	38
Brazil	82	95	92	62	71	80	64	76	70	64	62	57	76
Chile	29	19	18	20	22	26	30	26	30	32	33	32	38
Colombia	11	15	15	21	18	18	14	16	15	28	17	22	27
Europe	208	185	227	226	221	269	275	308	353	376	382	444	571
Belgium	9	6	12	7	8	9	8	12	8	13	7	14	27
England	49	44	57	49	41	53	57	35	59	64	51	53	67
France................	22	7	12	22	12	26	11	17	24	22	21	28	38
Germany 1/	10	13	20	19	28	26	23	35	40	46	64	73	82
Greece	31	34	29	31	24	33	29	43	47	45	51	49	79
Italy	8	8	13	14	19	22	28	36	30	49	33	44	56
East Asia	448	400	420	527	574	650	752	851	1,020	1,210	1,408	2,135	2,519
China, Rep. (Taiwan) .	154	159	162	237	254	275	286	290	315	321	352	457	438
China, PR	--	--	--	3	8	33	84	138	193	329	428	698	1,117
China, unspecified ...	16	2	--	1	--	1	2	--	6	3	5	100	92
Hong Kong	50	49	61	50	56	44	53	38	55	38	45	57	78
Japan	59	37	43	48	65	56	65	73	60	71	74	108	77
Korea	70	67	69	88	104	133	162	196	287	336	412	572	604
Thailand	62	53	57	63	53	65	69	75	63	67	56	88	63
West Asia	419	471	479	519	547	599	560	602	582	554	571	707	683
India	156	157	171	165	165	205	206	224	241	217	226	316	318
Iran	69	106	103	126	115	127	82	69	55	53	50	55	58
Iraq	15	21	22	22	34	19	32	21	26	23	15	11	10
Israel	49	33	51	49	51	42	37	45	31	30	32	48	45
Lebanon	14	11	8	13	8	12	11	12	11	18	19	5	10
Turkey	22	34	17	22	27	25	21	25	38	32	20	40	27
Pakistan	21	31	16	22	21	21	27	31	34	28	44	45	49
Australasia	95	90	107	112	124	105	104	109	90	108	124	128	132
Australia	28	32	30	35	34	33	29	18	27	27	31	30	19
Indonesia	23	16	33	27	38	25	26	30	26	29	37	39	39
New Zealand	14	14	13	10	17	11	14	15	9	9	23	11	15
Philippines	30	27	31	40	35	35	33	46	27	42	32	47	59
Africa	187	201	257	267	278	271	307	287	241	247	242	280	249
Egypt	18	31	37	43	45	39	50	42	51	54	51	70	45
Nigeria	50	58	89	71	70	52	66	49	52	48	31	35	34
Country unknown	155	152	145	114	116	126	236	210	231	293	269	85	69

See explanatory notes, if any, and SOURCE(S) at end of table.

Table A-20. Country of citizenship of non-U.S. citizens awarded science and engineering doctorates by visa type: 1979-91

Country of citizenship	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Temporary visas, cont.													
Engineering, total	817	851	942	1,030	1,170	1,269	1,419	1,372	1,532	1,721	1,941	2,273	2,473
Canada	10	16	13	16	18	19	20	16	26	20	29	31	37
Mexico & Ctrl. America .	21	15	24	14	32	16	24	22	23	26	30	29	23
Mexico	17	12	21	11	27	13	21	19	18	22	25	21	20
Cuba & Islands	3	2	--	1	2	5	4	5	5	1	5	3	3
South America	57	48	69	57	65	56	50	55	68	57	66	72	69
Argentina	8	10	5	4	7	10	11	10	8	6	6	10	7
Brazil	28	24	36	27	23	26	15	15	33	25	29	29	30
Chile	2	3	10	5	10	2	5	7	8	8	8	11	8
Colombia	4	2	3	3	2	9	4	4	7	4	3	7	10
Europe	82	65	78	93	93	87	85	109	120	143	168	174	153
Belgium	5	3	5	7	5	5	8	2	6	4	5	11	8
England	8	11	10	11	6	7	3	9	5	6	9	9	8
France................	13	4	7	12	10	14	10	11	13	20	16	21	15
Germany 1/	5	3	6	6	3	2	6	5	5	10	14	11	7
Greece	19	17	19	18	25	29	18	36	46	52	61	52	51
Italy	1	2	--	4	6	9	6	7	6	5	12	14	9
East Asia	205	219	280	333	384	483	546	566	688	777	883	1,137	1,378
China, Rep. (Taiwan) .	81	120	161	201	209	263	299	273	321	329	360	406	486
China, PR	--	1	--	--	5	25	47	53	77	123	148	271	392
China, unspecified ...	11	--	--	1	--	--	--	2	1	1	6	41	34
Hong Kong	15	22	27	24	24	20	24	21	13	28	33	25	21
Japan	25	26	28	29	27	36	24	24	13	22	18	16	23
Korea	35	30	38	48	87	95	114	156	224	235	286	329	376
Thailand	33	15	20	22	26	32	21	23	19	24	16	21	17
West Asia	290	301	313	354	388	382	423	377	379	427	456	588	611
India	142	151	141	135	143	165	178	175	175	219	217	272	296
Iran	45	68	63	86	96	87	79	67	48	42	55	78	73
Iraq	3	6	4	3	5	6	6	4	9	5	8	13	8
Israel	29	21	28	22	36	20	20	18	15	17	17	16	22
Lebanon	3	4	6	6	11	10	8	8	17	11	18	22	33
Turkey	30	24	27	36	31	32	51	38	36	34	47	48	56
Pakistan	9	8	7	10	9	7	13	19	13	19	12	24	30
Australasia	15	14	8	19	22	26	27	18	18	18	23	20	35
Australia	3	4	3	2	8	4	3	4	2	1	2	3	5
Indonesia	6	4	3	7	8	10	15	9	11	8	10	11	14
New Zealand	2	4	--	6	--	3	4	1	1	2	3	1	2
Philippines	4	2	2	4	6	9	5	4	4	7	8	5	14
Africa	69	88	99	84	107	128	116	99	95	121	123	166	124
Egypt	24	34	37	30	37	39	42	46	38	43	45	75	51
Nigeria	17	19	30	13	24	27	21	10	11	14	8	18	9
Country unknown	65	83	58	59	59	67	124	105	110	131	158	53	40

1/ Includes Federal Republic of Germany and former German Democratic Republic, as well as Germany, unspecified.

SOURCE: National Science Foundation/SRS, Doctorate Records File

Table A-21. Primary source of support while in graduate school for science and engineering doctorate recipients by citizenship status: 1991

Page 1 of 3

Primary source of support	Total, science and engineering					Percent distribution				
	Total	Citizenship known	U.S. citizens	Permanent visas	Temporary visas	Total	Citizenship known	U.S. citizens	Permanent visas	Temporary visas
Science and engineering ..	23,748	22,427	13,923	1,252	7,252					
Total with primary source reported	18,687	18,652	12,001	955	5,696	100.0	100.0	100.0	100.0	100.0
Federal fellowships and traineeships	985	985	955	16	14	5.3	5.3	8.0	1.7	0.2
Other Federal support	739	738	575	18	145	4.0	4.0	4.8	1.9	2.5
University-related	11,209	11,188	6,204	646	4,338	60.0	60.0	51.7	67.6	76.2
Research assistantships	6,585	6,571	3,482	391	2,698	35.2	35.2	29.0	40.9	47.4
Teaching assistantships	3,478	3,473	1,935	200	1,338	18.6	18.6	16.1	20.9	23.5
University fellowships	893	891	595	42	254	4.8	4.8	5.0	4.4	4.5
Other university funding	253	253	192	13	48	1.4	1.4	1.6	1.4	0.8
Loans	439	439	408	13	18	2.3	2.4	3.4	1.4	0.3
Own earnings	2,243	2,240	1,960	116	164	12.0	12.0	16.3	12.1	2.9
Spouse's earnings	1,244	1,244	1,157	49	38	6.7	6.7	9.6	5.1	0.7
Family contributions ...	591	588	286	42	260	3.2	3.2	2.4	4.4	4.6
Business/employer	286	286	218	16	52	1.5	1.5	1.8	1.7	0.9
Other	951	944	238	39	667	5.1	5.1	2.0	4.1	11.7
Unknown primary source ..	5,061	3,775	1,922	297	1,556	27.1	20.2	16.0	31.1	27.3

See explanatory notes, if any, and SOURCE(S) at end of table.

Table A-21. Primary source of support while in graduate school for science and engineering doctorate recipients by citizenship status: 1991

Primary source of support	Total, science					Percent distribution				
	Total	Citizenship known	U.S. citizens	Permanent visas	Temporary visas	Total	Citizenship known	U.S. citizens	Permanent visas	Temporary visas
Science	18,536	17,596	11,946	871	4,779					
Total with primary source reported	14,602	14,574	10,211	645	3,718	100.0	100.0	100.0	100.0	100.0
Federal fellowships and traineeships	923	923	899	14	10	6.3	6.3	8.8	2.2	0.3
Other Federal support	566	565	441	14	110	3.9	3.9	4.3	2.2	3.0
University-related	8,395	8,378	5,162	415	2,801	57.5	57.5	50.6	64.3	75.3
Research assistantships	4,425	4,413	2,673	219	1,521	30.3	30.3	26.2	34.0	40.9
Teaching assistantships	2,989	2,986	1,805	152	1,029	20.5	20.5	17.7	23.6	27.7
University fellowships	756	754	511	35	208	5.2	5.2	5.0	5.4	5.6
Other university funding	225	225	173	9	43	1.5	1.5	1.7	1.4	1.2
Loans	428	428	401	13	14	2.9	2.9	3.9	2.0	0.4
Own earnings	1,903	1,900	1,707	79	114	13.0	13.0	16.7	12.2	3.1
Spouse's earnings	1,125	1,125	1,050	42	33	7.7	7.7	10.3	6.5	0.9
Family contributions	452	449	270	30	149	3.1	3.1	2.6	4.7	4.0
Business/employer	124	124	95	6	23	0.8	0.9	0.9	0.9	0.6
Other	686	682	186	32	464	4.7	4.7	1.8	5.0	12.5
Unknown primary source	3,934	3,022	1,735	226	1,061	26.9	20.7	17.0	35.0	28.5

See explanatory notes, if any, and SOURCE(S) at end of table.

Table A-21. Primary source of support while in graduate school for science and engineering doctorate recipients by citizenship status: 1991

Page 3 of 3

Primary source of support	Engineering, total					Percent distribution				
	Total	Citizenship known	U.S. citizens	Permanent visas	Temporary visas	Total	Citizenship known	U.S. citizens	Permanent visas	Temporary visas
Engineering	5,212	4,831	1,977	381	2,473					
Total with primary source reported	4,085	4,078	1,790	310	1,978	100.0	100.0	100.0	100.0	100.0
Federal fellowships and traineeships	62	62	56	2	4	1.5	1.5	3.1	0.6	0.2
Other Federal support	173	173	134	4	35	4.2	4.2	7.5	1.3	1.8
University-related	2,814	2,810	1,042	231	1,537	68.9	68.9	58.2	74.5	77.7
Research assistantships	2,160	2,158	809	172	1,177	52.9	52.9	45.2	55.5	59.5
Teaching assistantships	489	487	130	48	309	12.0	11.9	7.3	15.5	15.6
University fellowships	137	137	84	7	46	3.4	3.4	4.7	2.3	2.3
Other university funding	28	28	19	4	5	0.7	0.7	1.1	1.3	0.3
Loans	11	11	7	0	4	0.3	0.3	0.4	0.0	0.2
Own earnings	340	340	253	37	50	8.3	8.3	14.1	11.9	2.5
Spouse's earnings	119	119	107	7	5	2.9	2.9	6.0	2.3	0.3
Family contributions ...	139	139	16	12	111	3.4	3.4	0.9	3.9	5.6
Business/employer	162	162	123	10	29	4.0	4.0	6.9	3.2	1.5
Other	265	262	52	7	203	6.5	6.4	2.9	2.3	10.3
Unknown primary source ..	1,127	753	187	71	495	27.6	18.5	10.4	22.9	25.0

NOTE: Research assistantships include both federally and institutionally financed.
SOURCE: National Science Foundation/SRS, Doctorate Records File

Table A-22. Science and engineering doctorates awarded to non-U.S. citizens, by institution, ranked by 1991 doctorates awarded to non-U.S. citizens: 1979-91

Page 1 of 6

Academic institution and rank	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
All academic institutions	3,602	3,662	3,855	3,981	4,298	4,527	4,957	5,128	5,536	6,047	6,499	7,721	8,504
1 University of Illinois-Urbana	108	92	91	91	108	113	124	138	122	127	154	189	205
2 University of California-Berkeley	120	123	130	140	155	116	114	127	113	178	222	217	194
3 University of Minnesota	76	59	67	82	58	80	81	116	84	105	111	152	187
4 University of Texas-Austin	56	47	61	64	67	68	83	95	114	128	133	139	177
5 Ohio State University-All Campuses	72	63	91	67	85	100	101	119	138	118	167	163	175
6 Cornell University	86	96	95	93	102	107	105	109	118	133	111	162	167
7 University of Wisconsin-Madison	93	90	87	91	94	107	117	115	139	139	109	141	156
8 University of Michigan	51	46	50	62	80	88	91	84	101	97	98	118	154
9 Stanford University	100	94	93	74	81	104	97	115	134	121	134	140	149
10 Pennsylvania State Univ-All Campuses	57	52	41	63	64	78	67	78	83	93	118	123	147
Total, 1st 10 institutions	819	762	806	827	894	961	980	1,096	1,146	1,239	1,357	1,544	1,711
11 Texas A & M University-All Campuses	33	40	40	28	54	64	65	67	85	74	95	96	147
12 Purdue University-All Campuses	78	78	80	83	95	99	100	99	83	98	131	149	146
13 University of California-Los Angeles	51	74	89	78	78	65	94	75	87	101	105	134	133
14 University of Florida	56	46	46	33	47	70	86	64	72	92	91	112	127
15 Iowa State Univ of Science & Tech	58	59	75	88	67	69	81	73	98	112	100	101	121
16 University of California-Davis	52	57	63	46	75	65	56	61	57	64	71	80	119
17 University of Maryland-College Park	28	31	24	40	40	39	46	68	62	59	77	116	112
18 University of Arizona	23	40	35	44	33	45	28	36	59	60	81	91	108
19 University of Pennsylvania	52	56	61	68	57	63	69	57	76	80	83	75	106
20 University of Washington	34	44	41	38	52	50	45	55	69	71	81	99	106
Total, 1st 20 institutions	1,284	1,287	1,360	1,373	1,492	1,590	1,650	1,751	1,894	2,050	2,272	2,597	2,936
21 University of Southern California	47	49	28	27	45	44	49	39	36	26	71	100	106
22 CUNY-Graduate School and University	31	21	25	20	20	35	38	32	39	53	43	67	99
23 Columbia University	53	58	64	53	44	50	66	61	68	68	92	92	98
24 North Carolina State Univ--Raleigh	44	35	50	51	63	47	60	58	67	79	78	98	96
25 Massachusetts Inst of Technology	93	100	99	104	112	110	127	109	127	96	82	96	93
26 SUNY-Buffalo	41	42	49	59	43	46	63	62	70	61	59	72	93
27 University of Massachusetts-Amherst	30	13	23	24	31	21	36	39	54	49	65	61	91
28 Rutgers State Univ of New Jersey	41	33	47	46	40	47	46	41	40	52	60	95	90
29 SUNY-Stony Brook	38	33	27	34	39	48	55	50	57	64	63	81	88
30 Harvard University	51	40	41	22	40	38	43	28	26	31	41	78	85
Total, 1st 30 institutions	1,753	1,711	1,813	1,813	1,969	2,076	2,233	2,270	2,478	2,629	2,926	3,437	3,875
31 Northwestern University	55	49	52	49	47	67	75	53	64	81	95	93	84
32 Michigan State University	66	78	80	94	89	79	61	64	55	77	76	98	78
33 University of Iowa	34	13	20	27	25	31	34	36	54	57	42	60	77
34 University of Connecticut	8	15	20	8	11	32	21	19	31	39	38	40	74
35 Princeton University	48	43	42	43	44	46	45	54	46	74	62	69	74
36 Georgia Inst of Tech--All Campuses	17	20	22	15	36	36	29	38	33	42	49	51	74
37 University of Pittsburgh	44	34	41	49	54	46	63	70	73	61	69	84	72
38 University of Georgia	27	14	26	26	20	21	36	34	43	48	47	52	71
39 University of Illinois-Chicago	11	15	16	16	24	17	22	32	39	48	42	58	69
40 Oregon State University	28	23	44	31	45	38	53	35	44	51	43	69	69
Total, 1st 40 institutions	2,091	2,015	2,176	2,171	2,364	2,489	2,672	2,705	2,960	3,207	3,489	4,111	4,617
41 New York University	22	24	23	28	24	27	27	38	38	41	41	66	67
42 Yale University	33	43	35	36	37	41	44	42	50	43	56	74	64
43 Carnegie-Mellon University	32	21	28	38	26	27	50	41	26	45	43	58	64
44 Rensselaer Polytechnic Institute	10	18	25	21	47	38	55	55	52	54	66	56	63
45 Virginia Polytech Inst & State Univ	30	20	30	35	46	39	61	54	44	56	66	39	63
46 Colorado State University	25	41	50	36	39	45	47	42	43	54	47	55	63
47 University of Rochester	28	35	24	27	29	21	24	37	39	32	41	59	62
48 Case Western Reserve University	28	28	31	28	28	41	43	48	56	56	71	53	62
49 Louisiana State Univ--All Campuses	14	17	13	12	28	24	23	35	33	57	54	71	62
50 Arizona State University	5	2	2	4	5	1	8	6	24	12	19	45	60
Total, 1st 50 institutions	2,318	2,264	2,437	2,436	2,673	2,793	3,054	3,103	3,365	3,657	3,993	4,687	5,247

See explanatory notes, if any, and SOURCE(S) at end of table.

Table A-22. Science and engineering doctorates awarded to non-U.S. citizens, by institution, ranked by 1991 doctorates awarded to non-U.S. citizens: 1979-91

Academic institution and rank	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
51 Univ of Cincinnati-All Campuses	22	30	21	26	34	29	21	31	32	41	30	49	59
52 University of California-San Diego	17	9	12	14	33	18	26	32	39	44	49	48	56
53 Boston University	14	15	10	23	24	33	37	25	34	30	30	33	55
54 Johns Hopkins University	17	22	21	15	16	15	27	27	22	31	25	44	54
55 University of Utah	10	11	19	23	18	19	25	30	30	29	26	36	54
56 University of Chicago	44	24	36	28	20	24	16	31	29	33	32	54	53
57 Washington State University	23	24	16	24	29	35	33	32	30	42	21	33	51
58 Syracuse University-All Campuses	21	15	17	19	16	28	26	24	26	43	41	47	49
59 University of Missouri-Columbia	29	41	40	39	35	41	39	48	27	52	48	62	48
60 Brown University	27	26	21	32	33	34	34	27	34	52	42	34	46
Total, 1st 60 institutions	2,542	2,481	2,650	2,679	2,931	3,069	3,338	3,410	3,668	4,054	4,337	5,127	5,772
61 Kansas State Univ of Ag & Appl Sci	23	28	38	35	41	35	43	33	54	41	47	51	46
62 Univ of North Carolina-Chapel Hill	13	13	12	9	13	13	12	17	16	31	30	34	46
63 California Institute of Technology	25	37	28	34	41	45	41	46	63	52	43	63	46
64 University of Hawaii-Manoa	33	26	34	34	25	30	56	33	40	25	43	47	46
65 University of Notre Dame	9	16	14	15	18	12	20	27	29	23	30	32	45
66 Univ of California-Santa Barbara	15	20	21	30	25	31	31	37	30	33	31	44	45
67 Duke University	9	9	9	18	13	9	17	10	13	12	24	27	44
68 Univ of South Carolina-All Campuses	10	7	8	16	9	10	22	19	24	33	17	34	43
69 Lehigh University	13	8	16	12	13	23	21	30	35	35	41	35	42
70 Indiana University-Bloomington	23	19	26	37	26	33	37	31	45	46	27	40	42
Total, 1st 70 institutions	2,715	2,664	2,856	2,919	3,155	3,310	3,638	3,693	4,017	4,385	4,670	5,534	6,217
71 Oklahoma State University	33	41	41	31	26	48	47	39	36	44	33	45	42
72 University of Kentucky	16	20	17	14	28	27	16	24	23	22	37	41	41
73 University of Colorado-Boulder	22	18	17	17	21	15	25	28	28	32	47	41	41
74 Polytechnic University	19	25	21	24	27	19	22	23	26	29	22	34	40
75 Washington University	13	21	17	27	35	20	25	22	24	36	34	37	39
76 Auburn University-All Campuses	6	14	7	14	18	14	16	20	25	25	31	24	38
77 Illinois Institute of Technology	17	13	20	15	11	10	23	22	25	31	22	40	37
78 Vanderbilt University	13	12	12	10	8	24	17	17	18	19	19	29	37
79 West Virginia University	16	11	9	10	13	15	26	18	17	24	34	29	36
80 University of Oklahoma	22	28	24	20	32	31	23	30	19	30	28	36	36
Total, 1st 80 institutions	2,892	2,867	3,041	3,101	3,374	3,533	3,878	3,936	4,258	4,677	4,977	5,890	6,604
81 University of Houston	25	26	22	24	28	36	29	34	31	43	45	30	36
82 Rice University	17	8	19	17	12	17	22	22	34	19	32	29	36
83 University of Rhode Island	3	6	7	10	10	5	12	12	15	21	19	23	35
84 Northeastern University	5	7	7	6	5	4	14	20	13	19	20	30	33
85 Wayne State University	23	17	10	12	28	16	25	27	20	23	27	35	33
86 University of Missouri-Rolla	5	6	8	5	9	10	15	18	27	21	24	30	33
87 University of Tennessee-Knoxville	22	28	24	19	23	26	23	27	25	26	29	35	33
88 University of California-Irvine	8	5	3	13	6	12	14	16	10	22	23	33	33
89 University of Akron-All Campuses	11	9	13	14	16	14	16	7	19	16	22	30	30
90 University of Nebraska-Lincoln	18	30	43	25	29	34	35	33	38	40	38	44	30
Total, 1st 90 institutions	3,029	3,009	3,197	3,246	3,540	3,707	4,083	4,152	4,490	4,927	5,256	6,209	6,936
91 Texas Tech University	10	11	13	11	13	19	15	28	30	26	33	34	30
92 SUNY-Albany	5	12	8	12	18	13	13	21	18	22	21	24	29
93 University of Delaware	7	12	8	18	11	18	15	26	23	29	20	29	29
94 George Washington University	14	13	9	16	12	25	28	33	13	25	24	50	29
95 University of Oregon	16	13	15	10	9	16	11	19	13	15	24	19	29
96 Stevens Institute of Technology	2	1	5	5	7	6	9	9	24	15	13	22	28
97 Clemson University	7	4	6	8	8	4	5	8	10	13	22	19	28
98 University of Texas-Arlington	6	6	7	7	12	9	7	12	23	14	34	34	28
99 University of Miami (FL)	7	8	7	8	10	13	12	15	15	34	20	26	27
100 University of Kansas	19	28	21	35	27	23	35	32	30	25	46	33	26
Total, 1st 100 institutions	3,122	3,117	3,296	3,376	3,667	3,853	4,233	4,355	4,689	5,145	5,513	6,499	7,219

See explanatory notes, if any, and SOURCE(S) at end of table.

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Table A-22. Science and engineering doctorates awarded to non-U.S. citizens, by institution, ranked by 1991 doctorates awarded to non-U.S. citizens: 1979-91

Academic institution and rank	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
101 Florida State University	19	14	16	25	18	19	22	20	19	26	22	37	26
102 University of New Mexico	6	5	5	7	9	9	13	16	18	21	17	23	25
103 Mississippi State University	7	21	18	19	22	27	20	19	14	25	16	34	24
104 University of Texas-Dallas	5	4	11	7	7	9	4	12	10	16	19	17	24
105 University of California-Riverside	19	27	16	27	17	30	31	26	30	17	23	17	24
106 Clarkson University	4	5	4	10	10	16	13	21	17	15	25	27	23
107 Southern Illinois Univ-Carbondale	7	10	7	8	14	7	13	14	9	19	20	20	23
108 University of Wisconsin-Milwaukee	11	3	5	6	7	3	20	13	15	13	10	18	23
109 Georgetown University	10	15	20	18	20	16	15	22	15	18	25	23	22
110 University of Virginia	10	8	17	12	14	12	14	16	23	19	26	21	22
Total, 1st 110 institutions	3,220	3,229	3,415	3,515	3,805	4,001	4,398	4,534	4,859	5,334	5,716	6,736	7,455
111 University of Wyoming	2	10	7	6	8	4	2	8	11	10	10	13	21
112 Temple University	10	7	11	7	5	4	9	11	22	11	13	20	19
113 Southern Methodist University	4	13	11	14	7	8	11	11	10	15	28	24	19
114 Howard University	22	11	21	19	20	16	26	27	20	24	16	13	18
115 Utah State University	23	18	22	14	16	32	26	17	26	31	26	22	18
116 University of California-Santa Cruz	1	5	4	6	2	5	7	5	8	10	9	7	18
117 Brandeis University	14	5	11	5	16	14	15	12	23	14	18	14	17
118 Michigan Technological University	1	0	3	5	1	2	5	3	4	4	5	11	17
119 University of Alabama	2	8	3	7	6	4	4	8	13	16	15	18	17
120 Tulane University of Louisiana	5	10	2	9	9	9	8	14	9	10	13	11	17
Total, 1st 120 institutions	3,304	3,316	3,510	3,607	3,895	4,099	4,511	4,650	5,005	5,479	5,869	6,889	7,636
121 University of North Texas	0	5	8	4	9	8	13	11	20	21	18	22	17
122 Tufts University	7	4	4	10	4	6	6	9	8	7	14	22	16
123 Yeshiva University-Einstein Med	5	1	2	6	0	1	2	5	6	5	12	7	16
124 University of Alabama-Birmingham	3	4	2	2	4	7	5	4	5	4	7	9	16
125 Brigham Young Univ-All Campuses	2	6	1	4	3	5	3	8	4	5	15	7	16
126 Rockefeller University	2	2	2	1	7	3	5	4	2	3	6	5	15
127 Kent State University-All Campuses	6	3	17	15	12	11	11	14	11	12	13	17	15
128 Emory University	4	2	4	3	2	8	6	4	8	6	5	17	15
129 New Mexico State Univ-All Campuses	5	8	7	8	11	12	13	11	14	17	17	26	15
130 Boston College	4	6	3	4	1	7	8	4	3	6	3	3	14
Total, 1st 130 institutions	3,342	3,357	3,560	3,664	3,948	4,167	4,583	4,724	5,086	5,565	5,979	7,024	7,791
131 Univ of Massachusetts-Lowell	1	3	2	3	1	5	3	4	9	4	11	13	14
132 University of Maine-Orono	1	1	0	1	3	2	0	6	9	6	5	10	13
133 Clark University	7	3	7	1	3	4	9	11	10	7	9	7	13
134 Northern Illinois University	7	2	2	2	3	2	6	3	6	8	1	8	13
135 University of South Florida	3	2	0	5	1	1	3	4	6	4	3	7	13
136 University of Arkansas-Fayetteville	10	8	15	9	20	32	23	22	15	11	7	16	13
137 University of Southwestern Louisiana	2	0	1	1	1	0	3	2	3	4	5	10	13
138 SUNY-Binghamton	9	7	4	10	4	7	7	9	9	8	9	15	12
139 Ohio University-All Campuses	9	3	10	9	5	8	6	9	16	11	16	12	12
140 University of Toledo	2	2	2	1	2	3	7	6	5	10	9	11	12
Total, 1st 140 institutions	3,393	3,388	3,603	3,706	3,991	4,231	4,650	4,800	5,174	5,638	6,054	7,133	7,919
141 North Dakota State Univ-All Campuses	9	6	3	5	8	7	11	12	7	15	13	11	12
142 Catholic University of America	7	10	6	12	10	6	4	4	5	4	8	14	12
143 Baylor College of Medicine	0	3	1	1	4	3	1	3	7	8	8	9	12
144 Colorado School of Mines	10	17	14	5	7	8	9	6	6	8	12	11	12
145 University of Nevada-Reno	3	2	2	2	3	3	1	1	3	4	4	9	12
146 Cornell Univ Medical College	2	2	1	2	3	2	4	2	3	3	3	6	11
147 Western Michigan University	2	3	1	1	3	4	0	3	2	4	4	3	11
148 Marquette University	4	6	3	5	3	4	8	9	3	7	5	10	11
149 Saint Louis University	2	8	4	7	11	1	5	5	4	4	8	8	11
150 Virginia Commonwealth University	1	0	1	2	2	0	1	0	2	0	1	2	11
Total, 1st 150 institutions	3,433	3,445	3,639	3,748	4,045	4,269	4,694	4,845	5,216	5,695	6,120	7,216	8,034

See explanatory notes, if any, and SOURCE(S) at end of table.

Table A-22. Science and engineering doctorates awarded to non-U.S. citizens, by institution, ranked by 1991 doctorates awarded to non-U.S. citizens: 1979-91

Academic institution and rank	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
151 University of Alabama-Huntsville	3	2	1	2	0	0	5	1	5	3	9	8	11
152 Montana State University	0	1	0	5	6	4	1	8	4	4	5	11	11
153 University of Idaho	9	8	11	7	10	8	7	5	10	10	23	22	11
154 Alfred University-Main Campus	0	0	3	0	1	4	1	0	3	5	2	6	10
155 Old Dominion University	3	2	0	4	3	3	3	2	3	8	7	20	10
156 Georgia State University	3	2	2	1	2	3	1	1	2	3	4	5	10
157 University of Mississippi	3	2	5	3	6	3	3	6	5	7	9	10	10
158 Univ of California-San Francisco	2	8	3	5	5	6	4	7	7	6	5	5	10
159 Dartmouth College	4	2	1	0	1	5	1	1	10	4	5	5	9
160 New Jersey Institute of Technology	2	0	5	2	1	4	3	3	5	4	13	5	9
Total, 1st 160 institutions	3,462	3,472	3,670	3,777	4,080	4,309	4,723	4,879	5,270	5,749	6,202	7,313	8,135
161 American University	2	8	7	6	6	13	12	15	12	13	14	9	9
162 University of Louisville	8	8	3	5	1	3	5	6	4	7	8	7	9
163 New School for Social Research	4	10	4	6	7	4	2	6	5	7	7	13	8
164 SUNY Hlth Sci Ctr-Brooklyn	3	3	0	1	3	2	1	0	0	0	3	4	8
165 Medical College of Ohio at Toledo	0	0	0	0	0	0	0	0	1	3	4	9	8
166 Illinois State University	1	0	3	1	1	0	1	1	1	2	1	1	8
167 Univ of Maryland-Baltimore County	0	0	0	2	0	1	3	4	3	3	3	10	8
168 Univ of Texas-Hlth Sci Cntr Houston	6	6	3	3	4	6	5	5	7	6	4	7	8
169 Oregon Graduate Center	1	1	3	5	2	1	1	2	3	6	4	5	8
170 Worcester Polytech Inst	3	0	1	2	4	2	4	2	1	0	5	17	7
Total, 1st 170 institutions	3,490	3,508	3,694	3,808	4,108	4,341	4,757	4,920	5,307	5,796	6,255	7,395	8,216
171 University of Maryland-Sch of Med	0	3	0	0	2	0	4	0	3	4	3	1	7
172 Florida Insitute of Technology	0	2	3	0	3	1	0	3	3	7	5	3	7
173 Loma Linda University	1	0	2	0	1	1	4	3	1	0	1	0	7
174 United States International Univ	12	23	19	13	15	16	12	5	5	7	6	1	7
175 Wesleyan University	0	0	1	1	3	0	1	1	2	0	3	4	6
176 Rutgers University-Newark	2	2	1	2	1	2	3	1	3	2	2	3	6
177 Bowling Green State University	2	3	2	6	2	5	2	3	1	0	4	6	6
178 Miami University-All Campuses (OH)	1	0	1	2	2	3	4	1	2	1	3	8	6
179 Medical University of South Carolina	2	0	2	1	2	1	2	3	2	4	2	1	6
180 Univ of Tennessee-Hlth Sci Ctr	1	2	1	2	5	2	0	0	1	0	2	1	6
Total, 1st 180 institutions	3,511	3,543	3,726	3,835	4,144	4,372	4,789	4,940	5,330	5,821	6,286	7,423	8,280
181 University of New Orleans	0	4	5	2	0	2	1	3	1	1	0	3	6
182 University of Tulsa	7	4	2	4	3	2	2	5	7	4	0	8	6
183 Univ of Texas-Med Branch Galveston	0	0	1	4	0	1	2	3	6	7	2	2	6
184 Univ of Texas- SW Medical Center	2	3	4	2	2	1	2	4	3	5	3	5	6
185 University of Denver	4	4	1	2	5	7	5	4	5	6	6	10	6
186 Claremont Graduate School	5	10	19	11	19	17	9	17	10	12	0	9	6
187 University of Vermont	0	1	5	1	1	0	0	2	3	3	4	2	5
188 SUNY-Coll of Environ Sci & Forestry	4	3	2	4	3	5	5	3	4	6	12	10	5
189 Oakland University	0	0	1	5	0	5	1	2	1	0	0	0	5
190 South Dakota School of Mines & Tech	0	1	1	1	0	0	0	1	3	6	2	5	5
Total, 1st 190 institutions	3,533	3,573	3,767	3,871	4,177	4,412	4,816	4,984	5,373	5,871	6,315	7,477	8,336
191 Wichita State University	1	0	0	0	3	0	3	0	3	4	9	5	5
192 University of Central Florida	0	0	1	0	0	1	2	3	2	3	5	5	5
193 Louisiana St U Med Ctr New Orleans	1	3	3	0	1	0	1	0	2	1	1	3	5
194 New Mexico Inst of Mining & Technol	2	1	2	2	1	0	2	0	0	1	1	5	5
195 Fordham University	3	8	8	6	2	4	1	1	5	4	2	4	4
196 New York Medical College	0	0	0	1	0	1	0	0	1	0	4	3	4
197 Ball State University	0	0	0	1	3	0	0	1	0	2	2	3	4
198 College of William and Mary	1	1	1	2	3	7	2	5	3	6	1	6	4
199 Medical College of Georgia	0	2	1	1	1	0	0	1	1	0	4	0	4
200 University of Southern Mississippi	0	1	1	4	1	3	1	1	3	5	5	3	4
Total, 1st 200 institutions	3,541	3,589	3,784	3,888	4,192	4,428	4,828	4,996	5,393	5,897	6,349	7,514	8,380

See explanatory notes, if any, and SOURCE(S) at end of table.

Table A-22. Science and engineering doctorates awarded to non-U.S. citizens, by institution, ranked by 1991 doctorates awarded to non-U.S. citizens: 1979-91

Academic institution and rank	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
201 Louisiana St U Med Ctr- Shreveport	0	0	0	1	0	1	0	0	0	2	1	2	4
202 S F Austin State Univ	0	0	0	0	0	0	0	1	1	0	1	2	4
203 University of Northern Colorado	0	2	1	3	4	3	4	1	2	5	2	3	4
204 Portland State University	3	2	2	3	4	5	4	1	6	6	5	3	4
205 California Sch Prof Psych, San Diego	0	1	0	2	0	2	4	4	3	4	3	1	4
206 University of Alaska	0	0	0	2	3	0	0	4	1	2	2	4	4
207 University of New Hampshire	2	1	4	5	5	3	1	5	5	7	6	6	3
208 New Jersey Med Sch-Newark	0	0	0	2	1	1	4	1	1	4	3	5	3
209 Loyola University of Chicago	7	1	2	4	5	1	3	2	4	3	2	5	3
210 South Dakota State University	1	2	1	1	1	3	5	6	4	2	5	5	3
Total, 1st 210 institutions	3,554	3,598	3,794	3,911	4,215	4,447	4,853	5,021	5,420	5,932	6,379	7,550	8,416
211 University of South Dakota	1	0	1	2	2	2	2	0	0	2	0	0	3
212 George Mason Univ	0	0	0	0	0	0	0	0	1	0	0	1	3
213 Clark Atlanta University	0	3	6	2	2	4	3	8	5	8	4	7	3
214 Florida Atlantic University	0	0	0	0	0	0	0	0	1	2	3	7	3
215 Tennessee Technological University	1	3	2	2	4	5	3	2	6	3	2	6	3
216 Baylor University	3	1	0	2	0	0	0	4	2	1	6	0	3
217 Sam Houston State Univ	1	0	0	0	0	1	3	0	0	0	1	1	3
218 Northern Arizona Univ	0	0	0	0	0	0	2	0	1	1	0	0	3
219 Univ of Massachusetts-Med Sch Worcst	0	0	0	0	0	0	0	1	0	0	0	0	2
220 Long Island Univ-Brooklyn	0	0	0	0	0	0	0	1	1	1	0	0	2
Total, 1st 220 institutions	3,560	3,605	3,803	3,919	4,223	4,459	4,866	5,037	5,437	5,950	6,395	7,572	8,444
221 Seton Hall University	0	1	1	0	2	0	2	3	1	1	0	2	2
222 Duquesne University	0	2	1	1	0	0	2	1	0	1	2	0	2
223 Medical College of Pennsylvania	0	0	0	2	0	1	1	0	0	1	1	1	2
224 Indiana State Univ-All Campuses	0	0	2	2	1	2	1	3	3	2	2	4	2
225 Rush University	0	0	0	2	0	1	1	0	0	1	0	2	2
226 University of Detroit	3	6	4	5	4	4	0	3	0	3	3	3	2
227 University of Missouri-St Louis	0	1	2	3	0	0	1	0	1	1	0	1	2
228 East Carolina Univ	0	0	0	0	0	0	0	0	0	0	1	1	2
229 Wake Forest University	0	0	1	0	1	0	0	2	0	2	1	1	2
230 East Tennessee State Univ	0	0	0	0	0	0	0	0	1	0	0	1	2
Total, 1st 230 institutions	3,563	3,615	3,814	3,934	4,231	4,467	4,874	5,049	5,443	5,962	6,405	7,588	8,464
231 Univ of Mississippi Med Ctr	0	0	1	0	2	2	0	0	2	1	4	8	2
232 Louisiana Tech University	0	0	0	1	3	0	1	2	2	3	4	2	2
233 University of Montana	0	0	1	1	0	0	3	9	4	4	1	1	2
234 Fuller Theol Seminary	0	0	0	1	0	0	0	2	2	0	1	4	2
235 Naval Postgraduate School	3	3	2	3	0	0	0	2	1	1	0	2	2
236 California Sch Prof Psych Alhambra	1	0	0	0	4	2	3	2	1	2	7	8	2
237 Univ of Puerto Rico-Rio Piedras	1	1	1	0	0	1	0	0	1	1	1	0	2
238 Hofstra University	0	0	0	0	2	0	1	0	2	0	0	2	1
239 SUNY-Health Science Ctr at Syracuse	0	0	1	1	2	0	0	0	2	1	1	1	1
240 Albany Medical College	1	0	0	0	0	0	0	0	2	0	0	2	1
Total, 1st 240 institutions	3,569	3,619	3,820	3,941	4,244	4,472	4,882	5,066	5,462	5,975	6,424	7,618	8,481
241 Drexel University	5	1	3	5	3	14	14	8	13	20	8	18	1
242 Indiana Univ of Pennsylvania	0	0	0	0	1	1	1	0	0	0	2	0	1
243 Thomas Jefferson Univ	0	0	0	2	0	1	0	0	0	3	2	0	1
244 Villanova University	1	0	0	0	2	0	2	0	2	0	1	0	1
245 Cleveland State University	0	0	1	0	4	3	3	1	2	2	2	8	1
246 Wright State University	0	0	0	0	0	0	0	0	1	1	0	1	1
247 Univ of Health Sci-Chicago Med Sch	0	1	0	1	0	2	1	0	1	1	1	4	1
248 University of Missouri-Kansas City	1	5	1	3	2	1	4	2	3	1	2	2	1
249 University of North Dakota	2	1	2	3	2	0	0	0	1	1	4	1	1
250 Creighton University	0	0	0	0	0	0	0	0	0	0	0	0	1
Total, 1st 250 institutions	3,578	3,627	3,827	3,955	4,258	4,494	4,907	5,077	5,485	6,004	6,446	7,652	8,491

See explanatory notes, if any, and SOURCE(S) at end of table.

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Table A-22. Science and engineering doctorates awarded to non-U.S. citizens, by institution, ranked by 1991 doctorates awarded to non-U.S. citizens: 1979-91

Page 6 of 6

Academic institution and rank	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
251 Uniformed Svcs U Hlth Sci	0	0	0	0	0	0	0	0	0	0	0	0	1
252 Inst of Paper Sci & Tech	1	1	0	0	1	0	0	0	0	0	2	1	1
253 Nova University	0	0	0	0	0	0	0	1	2	0	2	1	1
254 Memphis State University	0	3	4	0	1	2	2	0	3	1	1	3	1
255 Northeast Louisiana University	0	0	0	0	0	1	0	0	0	1	0	0	1
256 Univ of Texas-El Paso	0	0	1	1	0	1	1	1	1	0	1	0	1
257 Univ of Texas Hlth Sci Ctr San Anton	2	1	0	0	0	1	0	0	1	0	1	6	1
258 Texas Woman's University	2	2	3	1	6	4	4	6	5	2	2	4	1
259 Oregon Hlth Sci Univ	2	1	1	2	0	0	0	2	1	0	3	3	1
260 University of the Pacific	0	0	0	0	0	0	0	0	2	0	1	3	1
Total, 1st 260 institutions	3,585	3,635	3,836	3,959	4,266	4,503	4,914	5,087	5,500	6,008	6,459	7,673	8,501
261 Rand Graduate Sch of Policy Studies	1	1	0	0	1	1	0	2	0	2	1	1	1
262 California Sch Prof Psych, Berkeley	2	0	0	1	3	2	2	1	1	2	0	2	1
263 Saybrook Institute	0	0	0	0	0	0	0	1	1	1	1	1	1
Total, 1st 263 institutions	3,588	3,636	3,836	3,960	4,270	4,506	4,916	5,091	5,502	6,013	6,461	7,677	8,504
All other institutions	14	26	19	21	28	21	41	37	34	34	38	44	0

SOURCE: National Science Foundation/SRS, Doctorate Records File

Table A-23. Postgraduation plans of science and engineering doctorates by major field and citizenship status: 1991

Citizenship status and field of study	Total	Total with definite plans	Percent with definite plans	Definite plans in the United States						Definite plans abroad	Definite plans, location unknown
				Total	Post-doctoral study	Academic employ-ment	Industry employ-ment	Other employ-ment	Unknown type		
Total doctorates 1/											
Total, all fields	37,451	18,855	50.3	17,919	4,212	7,093	2,605	3,922	87	737	199
Total, science and engineering	23,748	10,747	45.3	10,103	3,873	2,563	2,147	1,495	25	539	105
Total, sciences	18,536	9,162	49.4	8,613	3,663	2,236	1,422	1,270	22	461	88
Physical sciences	3,602	1,648	45.8	1,517	802	137	473	102	3	116	15
Physics/astronomy	1,408	563	40.0	493	301	59	84	48	1	65	5
Chemistry	2,194	1,085	49.5	1,024	501	78	389	54	2	51	10
Earth, atmospheric, & ocean sciences	837	424	50.7	387	154	66	91	76	0	34	3
Mathematical sciences	1,040	328	31.5	316	71	183	41	21	0	11	1
Computer/information sciences	797	294	36.9	268	30	120	97	21	--	25	1
Agricultural sciences	1,072	394	36.8	357	114	102	80	61	0	31	6
Biological sciences	4,642	2,608	56.2	2,445	1,917	248	152	122	6	135	28
Psychology	3,240	2,034	62.8	1,991	448	515	385	636	7	26	17
Social sciences	3,306	1,432	43.3	1,332	127	865	103	231	6	83	17
Total, engineering	5,212	1,585	30.4	1,490	210	327	725	225	3	78	17
Chemical	620	271	43.7	258	29	20	190	19	0	11	2
Civil	509	118	23.2	108	8	46	36	18	0	7	3
Electrical/electronics	1,206	358	29.7	340	38	82	176	42	2	13	5
Materials science	362	117	32.3	99	27	7	53	12	--	17	1
Mechanical	874	230	26.3	221	31	52	94	44	0	7	2
Other engineering	1,641	491	29.9	464	77	120	176	90	1	23	4
Total, non-S&E 2/	13,703	8,108	59.2	7,816	339	4,530	458	2,427	62	198	94
U.S. citizens											
Total, all fields	24,721	17,834	72.1	17,092	3,962	6,790	2,398	3,861	81	568	174
Total, science and engineering	13,923	10,048	72.2	9,523	3,651	2,434	1,961	1,457	20	441	84
Total, sciences	11,946	8,649	72.4	8,191	3,466	2,131	1,335	1,240	19	386	72
Physical sciences	2,048	1,536	75.0	1,421	745	130	443	100	3	103	12
Physics/astronomy	737	518	70.3	456	274	57	77	47	1	58	4
Chemistry	1,311	1,018	77.7	965	471	73	366	53	2	45	8
Earth, atmospheric, & ocean sciences	584	411	70.4	375	150	66	85	74	--	33	3
Mathematical sciences	439	297	67.7	288	65	168	37	18	--	8	1
Computer/information sciences	379	259	68.3	235	25	114	76	20	--	23	1
Agricultural sciences	551	365	66.2	338	107	99	72	60	--	22	5
Biological sciences	3,248	2,463	75.8	2,323	1,816	239	143	119	6	118	22
Psychology	2,796	1,997	71.4	1,962	439	510	379	627	7	19	16
Social sciences	1,901	1,321	69.5	1,249	119	805	100	222	3	60	12
Total, engineering	1,977	1,399	70.8	1,332	185	303	626	217	1	55	12
Chemical	316	245	77.5	236	26	20	171	19	--	7	2
Civil	139	100	71.9	95	8	43	27	17	--	3	2
Electrical/electronics	465	299	64.3	290	33	75	143	39	--	7	2
Materials science	152	107	70.4	89	22	7	48	12	--	17	1
Mechanical	279	202	72.4	196	24	47	83	42	--	5	1
Other engineering	626	446	71.2	426	72	111	154	88	1	16	4
Total, non-S&E 2/	10,798	7,786	72.1	7,569	311	4,356	437	2,404	61	127	90

See explanatory notes, if any, and SOURCE(S) at end of table.

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Table A-23. Postgraduation plans of science and engineering doctorates by major field and citizenship status: 1991

Page 2 of 4

Citizenship status and field of study	Total with definite plans	Percent with definite plans in the United States						Percent with definite plans abroad	Percent with definite plans location unknown
		Total	Post-doctoral study	Academic employ-ment	Industry employ-ment	Other employ-ment	Unknown type		
Total doctorates 1/									
Total, all fields	100.0	95.0	22.3	37.6	13.8	20.8	0.5	3.9	1.1
Total, science and engineering	100.0	94.0	36.0	23.8	20.0	13.9	0.2	5.0	1.0
Total, sciences	100.0	94.0	40.0	24.4	15.5	13.9	0.2	5.0	1.0
Physical sciences	100.0	92.1	48.7	8.3	28.7	6.2	0.2	7.0	0.9
Physics/astronomy	100.0	87.6	53.5	10.5	14.9	8.5	0.2	11.5	0.9
Chemistry	100.0	94.4	46.2	7.2	35.9	5.0	0.2	4.7	0.9
Earth, atmospheric, & ocean sciences	100.0	91.3	36.3	15.6	21.5	17.9	0.0	8.0	0.7
Mathematical sciences	100.0	96.3	21.6	55.8	12.5	6.4	0.0	3.4	0.3
Computer/information sciences	100.0	91.2	10.2	40.8	33.0	7.1	0.0	8.5	0.3
Agricultural sciences	100.0	90.6	28.9	25.9	20.3	15.5	0.0	7.9	1.5
Biological sciences	100.0	93.8	73.5	9.5	5.8	4.7	0.2	5.2	1.1
Psychology	100.0	97.9	22.0	25.3	18.9	31.3	0.3	1.3	0.8
Social sciences	100.0	93.0	8.9	60.4	7.2	16.1	0.4	5.8	1.2
Total, engineering	100.0	94.0	13.2	20.6	45.7	14.2	0.2	4.9	1.1
Chemical	100.0	95.2	10.7	7.4	70.1	7.0	0.0	4.1	0.7
Civil	100.0	91.5	6.8	39.0	30.5	15.3	0.0	5.9	2.5
Electrical/electronics	100.0	95.0	10.6	22.9	49.2	11.7	0.6	3.6	1.4
Materials science	100.0	84.6	23.1	6.0	45.3	10.3	0.0	14.5	0.9
Mechanical	100.0	96.1	13.5	22.6	40.9	19.1	0.0	3.0	0.9
Other engineering	100.0	94.5	15.7	24.4	35.8	18.3	0.2	4.7	0.8
Total, non-S&E 2/	100.0	96.4	4.2	55.9	5.6	29.9	0.8	2.4	1.2
U.S. citizens									
Total, all fields	100.0	95.8	22.2	38.1	13.4	21.6	0.5	3.2	1.0
Total, science and engineering	100.0	94.8	36.3	24.2	19.5	14.5	0.2	4.4	0.8
Total, sciences	100.0	94.7	40.1	24.6	15.4	14.3	0.2	4.5	0.8
Physical sciences	100.0	92.5	48.5	8.5	28.8	6.5	0.2	6.7	0.8
Physics/astronomy	100.0	88.0	52.9	11.0	14.9	9.1	0.2	11.2	0.8
Chemistry	100.0	94.8	46.3	7.2	36.0	5.2	0.2	4.4	0.8
Earth, atmospheric, & ocean sciences	100.0	91.2	36.5	16.1	20.7	18.0	0.0	8.0	0.7
Mathematical sciences	100.0	97.0	21.9	56.6	12.5	6.1	0.0	2.7	0.3
Computer/information sciences	100.0	90.7	9.7	44.0	29.3	7.7	0.0	8.9	0.4
Agricultural sciences	100.0	92.6	29.3	27.1	19.7	16.4	0.0	6.0	1.4
Biological sciences	100.0	94.3	73.7	9.7	5.8	4.8	0.2	4.8	0.9
Psychology	100.0	98.2	22.0	25.5	19.0	31.4	0.4	1.0	0.8
Social sciences	100.0	94.5	9.0	60.9	7.6	16.8	0.2	4.5	0.9
Total, engineering	100.0	95.2	13.2	21.7	44.7	15.5	0.1	3.9	0.9
Chemical	100.0	96.3	10.6	8.2	69.8	7.8	0.0	2.9	0.8
Civil	100.0	95.0	8.0	43.0	27.0	17.0	0.0	3.0	2.0
Electrical/electronics	100.0	97.0	11.0	25.1	47.8	13.0	0.0	2.3	0.7
Materials science	100.0	83.2	20.6	6.5	44.9	11.2	0.0	15.9	0.9
Mechanical	100.0	97.0	11.9	23.3	41.1	20.8	0.0	2.5	0.5
Other engineering	100.0	95.5	16.1	24.9	34.5	19.7	0.2	3.6	0.9
Total, non-S&E 2/	100.0	97.2	4.0	55.9	5.6	30.9	0.8	1.6	1.2

See explanatory notes, if any, and SOURCE(S) at end of table.

Table A-23. Postgraduation plans of science and engineering doctorates by major field and citizenship status: 1991

Citizenship status and field of study	Total	Total with definite plans	Percent with definite plans	Definite plans in the United States						Definite plans abroad	Definite plans, location unknown
				Total	Post-doctoral study	Academic employ-ment	Industry employ-ment	Other employ-ment	Unknown type		
Non-U.S. citizens, permanent visas											
Total, all fields	1,814	975	53.7	817	247	298	206	60	6	133	25
Total, science and engineering	1,252	671	53.6	575	219	128	185	38	5	75	21
Total, sciences	871	491	56.4	418	195	104	86	30	3	57	16
Physical sciences	178	107	60.1	94	56	7	29	2	--	10	3
Physics/astronomy	69	44	63.8	37	27	2	7	1	--	6	1
Chemistry	109	63	57.8	57	29	5	22	1	--	4	2
Earth, atmospheric, & ocean sciences	26	12	46.2	12	4	--	6	2	--	--	--
Mathematical sciences	55	30	54.5	27	6	14	4	3	--	3	--
Computer/information sciences	62	35	56.5	33	5	6	21	1	--	2	--
Agricultural sciences	56	24	42.9	18	6	3	8	1	--	5	1
Biological sciences	207	141	68.1	122	101	9	9	3	--	13	6
Psychology	60	36	60.0	29	9	5	6	9	--	6	1
Social sciences	227	106	46.7	83	8	60	3	9	3	18	5
Total, engineering	381	180	47.2	157	24	24	99	8	2	18	5
Chemical	44	25	56.8	22	3	--	19	--	--	3	--
Civil	35	16	45.7	13	--	3	9	1	--	2	1
Electrical/electronics	113	58	51.3	49	5	7	33	3	1	6	3
Materials science	25	10	40.0	10	5	--	5	--	--	--	--
Mechanical	59	27	45.8	24	6	5	11	2	--	2	1
Other engineering	105	44	41.9	39	5	9	22	2	1	5	--
Total, non-S&E 2/	562	304	54.1	242	28	170	21	22	1	58	4
Non-U.S. citizens, temporary visas											
Total, all fields	8,852	5,227	59.0	2,947	1,395	840	591	108	13	2,114	166
Total, science and engineering	7,252	4,241	58.5	2,551	1,341	536	570	92	12	1,550	140
Total, sciences	4,779	2,971	62.2	1,787	1,090	401	218	70	8	1,080	104
Physical sciences	1,205	747	62.0	527	405	19	90	12	1	181	39
Physics/astronomy	546	348	63.7	237	195	9	25	8	--	94	17
Chemistry	659	399	60.5	290	210	10	65	4	1	87	22
Earth, atmospheric, & ocean sciences	188	119	63.3	48	34	3	9	1	1	66	5
Mathematical sciences	480	270	56.3	191	64	110	13	3	1	68	11
Computer/information sciences	338	206	60.9	152	29	58	60	5	--	50	4
Agricultural sciences	424	259	61.1	79	50	7	19	2	1	171	9
Biological sciences	1,027	714	69.5	507	456	28	15	4	4	185	22
Psychology	121	76	62.8	40	18	14	4	4	--	32	4
Social sciences	996	580	58.2	243	34	162	8	39	--	327	10
Total, engineering	2,473	1,270	51.4	764	251	135	352	22	4	470	36
Chemical	238	143	60.1	94	34	5	54	--	1	45	4
Civil	303	136	44.9	68	15	18	32	2	1	65	3
Electrical/electronics	554	290	52.3	194	54	32	102	5	1	87	9
Materials science	164	92	56.1	51	31	3	13	4	--	39	2
Mechanical	457	213	46.6	136	55	15	60	5	1	69	8
Other engineering	757	396	52.3	221	62	62	91	6	--	165	10
Total, non-S&E 2/	1,600	986	61.6	396	54	304	21	16	1	564	26

See explanatory notes, if any, and SOURCE(S) at end of table.

Table A-23. Postgraduation plans of science and engineering doctorates by major field and citizenship status: 1991

Page 4 of 4

Citizenship status and field of study	Total with definite plans	Percent with definite plans in the United States						Percent with definite plans abroad	Percent with definite plans location unknown
		Total	Post-doctoral study	Academic employ-ment	Industry employ-ment	Other employ-ment	Unknown type		
Non-U.S. citizens, permanent visas									
Total, all fields	100.0	83.8	25.3	30.6	21.1	6.2	0.6	13.6	2.6
Total, science and engineering	100.0	85.7	32.6	19.1	27.6	5.7	0.7	11.2	3.1
Total, sciences	100.0	85.1	39.7	21.2	17.5	6.1	0.6	11.6	3.3
Physical sciences	100.0	87.9	52.3	6.5	27.1	1.9	0.0	9.3	2.8
Physics/astronomy	100.0	84.1	61.4	4.5	15.9	2.3	0.0	13.6	2.3
Chemistry	100.0	90.5	46.0	7.9	34.9	1.6	0.0	6.3	3.2
Earth, atmospheric, & ocean sciences	100.0	100.0	33.3	0.0	50.0	16.7	0.0	0.0	0.0
Mathematical sciences	100.0	90.0	20.0	46.7	13.3	10.0	0.0	10.0	0.0
Computer/information sciences	100.0	94.3	14.3	17.1	60.0	2.9	0.0	5.7	0.0
Agricultural sciences	100.0	75.0	25.0	12.5	33.3	4.2	0.0	20.8	4.2
Biological sciences	100.0	86.5	71.6	6.4	6.4	2.1	0.0	9.2	4.3
Psychology	100.0	80.6	25.0	13.9	16.7	25.0	0.0	16.7	2.8
Social sciences	100.0	78.3	7.5	56.6	2.8	8.5	2.8	17.0	4.7
Total, engineering	100.0	87.2	13.3	13.3	55.0	4.4	1.1	10.0	2.8
Chemical	100.0	88.0	12.0	0.0	76.0	0.0	0.0	12.0	0.0
Civil	100.0	81.3	0.0	18.8	56.3	6.3	0.0	12.5	6.3
Electrical/electronics	100.0	84.5	8.6	12.1	56.9	5.2	1.7	10.3	5.2
Materials science	100.0	100.0	50.0	0.0	50.0	0.0	0.0	0.0	0.0
Mechanical	100.0	88.9	22.2	18.5	40.7	7.4	0.0	7.4	3.7
Other engineering	100.0	88.6	11.4	20.5	50.0	4.5	2.3	11.4	0.0
Total, non-S&E 2/	100.0	79.6	9.2	55.9	6.9	7.2	0.3	19.1	1.3
Non-U.S. citizens, temporary visas									
Total, all fields	100.0	56.4	26.7	16.1	11.3	2.1	0.2	40.4	3.2
Total, science and engineering	100.0	60.2	31.6	12.6	13.4	2.2	0.3	36.5	3.3
Total, sciences	100.0	60.1	36.7	13.5	7.3	2.4	0.3	36.4	3.5
Physical sciences	100.0	70.5	54.2	2.5	12.0	1.6	0.1	24.2	5.2
Physics/astronomy	100.0	68.1	56.0	2.6	7.2	2.3	0.0	27.0	4.9
Chemistry	100.0	72.7	52.6	2.5	16.3	1.0	0.3	21.8	5.5
Earth, atmospheric, & ocean sciences	100.0	40.3	28.6	2.5	7.6	0.8	0.8	55.5	4.2
Mathematical sciences	100.0	70.7	23.7	40.7	4.8	1.1	0.4	25.2	4.1
Computer/information sciences	100.0	73.8	14.1	28.2	29.1	2.4	0.0	24.3	1.9
Agricultural sciences	100.0	30.5	19.3	2.7	7.3	0.8	0.4	66.0	3.5
Biological sciences	100.0	71.0	63.9	3.9	2.1	0.6	0.6	25.9	3.1
Psychology	100.0	52.6	23.7	18.4	5.3	5.3	0.0	42.1	5.3
Social sciences	100.0	41.9	5.9	27.9	1.4	6.7	0.0	56.4	1.7
Total, engineering	100.0	60.2	19.8	10.6	27.7	1.7	0.3	37.0	2.8
Chemical	100.0	65.7	23.8	3.5	37.8	0.0	0.7	31.5	2.8
Civil	100.0	50.0	11.0	13.2	23.5	1.5	0.7	47.8	2.2
Electrical/electronics	100.0	66.9	18.6	11.0	35.2	1.7	0.3	30.0	3.1
Materials science	100.0	55.4	33.7	3.3	14.1	4.3	0.0	42.4	2.2
Mechanical	100.0	63.8	25.8	7.0	28.2	2.3	0.5	32.4	3.8
Other engineering	100.0	55.8	15.7	15.7	23.0	1.5	0.0	41.7	2.5
Total, non-S&E 2/	100.0	40.2	5.5	30.8	2.1	1.6	0.1	57.2	2.6

1/ Total includes doctorates of unknown citizenship.
2/ Non-S&E doctorates include those whose field of specialization is unknown.
SOURCE: National Science Foundation/SRS, Doctorate Records File

Table A-24. Total and non-U.S. citizen science and engineering postdoctoral appointees in doctorate-granting institutions, and percent non-U.S. citizens, by field: 1980-91

Page 1 of 3

Field	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Total, all surveyed fields	18,086	18,411	19,646	19,362	20,727	21,535	22,423	23,781	24,929	26,165	28,107	30,432
Total, S&E fields	13,551	14,013	14,781	14,672	15,699	16,211	16,975	17,989	18,911	19,866	21,145	22,397
Sciences, total	12,484	13,035	13,741	13,694	14,598	15,017	15,628	16,591	17,469	18,182	19,231	20,444
Physical sciences	4,025	4,264	4,462	4,281	4,444	4,386	4,517	4,843	4,953	5,187	5,355	5,545
Astronomy	132	141	132	148	111	118	138	133	125	147	186	184
Chemistry	2,604	2,710	2,870	2,805	2,973	2,906	2,995	3,151	3,246	3,429	3,462	3,610
Physics	1,287	1,398	1,445	1,326	1,350	1,320	1,342	1,527	1,548	1,578	1,678	1,721
Physical sciences, n.e.c.	2	15	15	2	10	42	42	32	34	33	29	30
Earth, atmos., & oc. sci.	315	308	339	335	415	488	375	417	420	499	459	611
Atmospheric sciences	31	43	46	32	41	74	48	43	58	71	58	57
Geosciences	219	194	213	216	237	250	226	247	239	279	274	359
Oceanography	54	57	67	78	120	151	79	98	81	116	107	174
Earth, atmospheric, & ocean sciences, n.e.c.	11	14	13	9	17	13	22	29	42	33	20	21
Mathematical sciences	162	162	113	194	170	203	226	201	228	280	223	253
Computer sciences	38	43	34	46	82	63	74	74	100	91	78	71
Agricultural sciences	215	239	284	279	295	358	357	388	414	422	477	499
Biological sciences	6,875	7,106	7,706	7,756	8,404	8,758	9,226	9,816	10,515	10,885	11,723	12,498
Anatomy	244	237	248	261	284	282	310	342	334	382	468	483
Biochemistry	1,562	1,599	1,724	1,684	1,750	1,789	1,866	1,989	2,121	2,090	2,322	2,319
Biology	965	989	870	942	1,013	1,127	1,128	1,101	1,189	1,232	1,290	1,361
Biometry/epidemiology	68	72	64	53	52	67	59	99	78	76	105	103
Biophysics	101	151	155	129	183	121	101	133	116	144	143	122
Botany	163	220	240	268	369	347	371	392	435	475	480	475
Cell biology	352	410	532	516	653	648	723	812	899	894	977	1,346
Ecology	18	22	44	28	39	36	37	37	32	33	52	57
Entomology/parasitology	104	119	133	119	172	113	139	143	162	176	219	212
Genetics	239	258	298	312	344	382	377	428	483	504	535	644
Microbiology	861	873	967	1,014	1,025	1,071	1,168	1,255	1,310	1,405	1,539	1,505
Nutrition	170	129	171	138	150	150	202	185	177	141	130	139
Pathology	429	477	468	540	584	607	619	709	765	819	899	1,037
Pharmacology	637	624	755	777	835	848	801	634	964	1,079	1,166	1,190
Physiology	681	668	758	673	754	817	833	896	1,019	1,034	1,067	1,074
Zoology	215	193	207	203	183	157	212	212	214	209	214	216
Biosciences, n.e.c.	66	65	72	67	72	196	180	142	200	212	195	215
Psychology	454	475	471	520	435	422	498	520	458	497	535	487
Social sciences	400	438	332	283	353	339	355	332	381	321	381	480
Agricultural economics	6	8	6	10	28	18	31	35	31	20	28	57
Anthropology	41	40	30	34	60	57	57	52	54	56	74	88
Economics (except agric.)	99	146	30	13	20	26	19	22	36	9	33	42
Geography	5	15	23	5	7	13	10	11	18	22	22	19
Hist. & phil. of science	11	15	21	14	19	13	11	11	18	16	12	16
Linguistics	30	54	47	47	51	30	26	21	42	36	30	38
Political science	29	30	46	44	43	31	22	66	55	50	41	66
Sociology	115	99	90	89	99	114	93	82	93	73	83	104
Sociology/anthropology	4	3	0	2	1	0	2	1	3	1	0	2
Social sciences, n.e.c.	60	28	39	25	25	37	63	29	31	38	58	46
Engineering, total	1,067	978	1,040	978	1,101	1,194	1,347	1,398	1,442	1,684	1,914	1,953
Aerospace	32	20	14	25	32	42	51	48	43	48	38	97
Agricultural	25	9	9	6	2	8	15	17	39	31	38	31
Biomedical	32	28	34	31	28	34	47	52	44	27	67	74
Chemical	192	183	171	174	198	245	273	295	310	423	466	551
Civil	128	124	107	108	131	146	122	140	125	203	182	128
Electrical	142	121	191	176	174	139	176	172	175	182	193	241
Engineering science	74	79	87	76	71	93	90	97	73	98	74	79
Industrial	8	16	13	9	13	21	18	25	36	38	38	19
Mechanical	143	137	130	130	182	198	207	221	216	216	302	219
Metallurgical/materials	209	172	193	166	204	168	245	249	282	325	323	368
Mining	5	3	16	10	19	18	19	25	26	63	90	19
Nuclear	20	22	26	18	15	19	31	31	20	17	36	30
Petroleum	6	6	2	4	1	4	9	1	10	8	9	14
Engineering, n.e.c.	51	58	47	45	29	59	47	35	44	47	58	83
Total, health fields	4,535	4,398	4,865	4,690	5,028	5,324	5,448	5,792	6,018	6,299	6,962	8,035
Dentistry	102	79	139	246	190	171	201	86	64	87	38	66
Neurology	265	283	287	254	301	352	332	369	420	478	463	537
Nursing	7	9	8	0	9	14	17	16	29	30	36	23
Pharmaceutical sciences	235	233	243	238	207	237	272	330	365	396	416	409
Prev. med./cmty. health	112	161	135	143	142	186	177	209	180	156	187	219
Speech pathology/audiology	36	18	19	10	18	18	18	12	25	26	28	28
Veterinary sciences	22	52	31	49	50	78	69	100	112	132	111	119
Clinical medicine, n.e.c.	3,661	3,461	3,890	3,658	3,998	4,168	4,262	4,569	4,731	4,889	5,558	6,480
Health related, n.e.c.	95	102	113	92	116	100	100	101	92	105	125	154

See explanatory notes, if any, and SOURCE(S) at end of table.

Table A-24. Total and non-U.S. citizen science and engineering postdoctoral appointees in doctorate-granting institutions, and percent non-U.S. citizens, by field: 1980-91

Page 2 of 3

Field	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Non-U.S. citizens	6,054	6,506	7,297	7,234	7,528	7,988	8,883	9,700	10,771	11,719	13,126	14,678
Total, S&E fields	4,981	5,409	5,938	5,961	6,210	6,513	7,218	7,832	8,520	9,325	10,300	11,307
Sciences, total	4,328	4,733	5,229	5,304	5,519	5,754	6,311	6,892	7,574	8,226	9,043	9,963
Physical sciences	2,014	2,159	2,358	2,367	2,385	2,412	2,501	2,640	2,778	2,931	3,089	3,340
Astronomy	38	22	37	33	29	32	43	25	49	57	77	75
Chemistry	1,429	1,535	1,654	1,661	1,664	1,656	1,718	1,879	1,993	2,101	2,106	2,289
Physics	547	598	667	673	689	708	733	731	731	766	900	970
Physical sciences, n.e.c.	0	4	0	0	3	16	7	5	5	7	6	6
Earth, atmos., & oc. sci.	110	102	126	121	159	164	125	141	162	188	180	219
Atmospheric sciences	16	17	22	17	21	23	15	11	17	30	23	26
Geosciences	81	70	81	84	100	108	90	89	105	111	113	141
Oceanography	13	13	19	18	31	30	15	31	25	34	34	44
Earth, atmospheric, & ocean sciences, n.e.c.	0	2	4	2	7	3	5	10	15	13	10	8
Mathematical sciences	80	92	61	126	90	100	114	101	110	133	129	154
Computer sciences	13	13	16	12	45	21	29	29	35	39	36	31
Agricultural sciences	74	93	113	116	81	102	142	163	161	148	192	190
Biological sciences	1,902	2,099	2,378	2,397	2,582	2,808	3,221	3,646	4,168	4,636	5,198	5,743
Anatomy	25	39	57	51	72	67	76	103	124	152	187	232
Biochemistry	530	610	706	626	640	704	825	922	910	978	1,070	1,210
Biology	239	255	237	274	274	291	280	366	380	441	436	550
Biometry/epidemiology	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Biophysics	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Botany	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Cell biology	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Ecology	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Entomology/parasitology	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Genetics	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Microbiology	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Nutrition	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Pathology	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Pharmacology	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Physiology	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Zoology	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Biosciences, n.e.c.	25	26	18	18	29	79	86	55	96	110	120	122
Psychology	34	30	54	65	61	46	54	50	73	73	102	85
Social sciences	101	145	123	100	116	101	125	122	87	78	117	201
Agricultural economics	4	2	1	9	8	4	10	18	17	6	11	31
Anthropology	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Economics (except agric.)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Geography	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Hist. & phil. of science	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Linguistics	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Political science	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Sociology	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Sociology/anthropology	0	0	0	1	1	0	[illegible]	0	0	1	0	1
Social sciences, n.e.c.	2	11	21	10	12	13	20	14	4	5	11	17
Engineering, total	653	676	709	657	691	759	907	940	946	1,099	1,257	1,344
Aerospace	23	14	8	16	24	32	41	33	30	26	54	46
Agricultural	5	5	5	3	1	2	9	13	[illegible]	10	27	19
Biomedical	10	11	12	6	8	13	20	12	[illegible]	21	38	37
Chemical	127	137	128	133	143	180	218	232	243	323	329	394
Civil	70	65	73	70	79	83	73	94	118	112	102	91
Electrical	72	83	87	92	107	110	100	113	75	116	135	163
Engineering science	39	50	50	41	32	38	49	39	21	15	46	47
Industrial	5	8	7	5	7	9	2	6	7	6	15	5
Mechanical	86	94	106	100	113	114	146	147	147	140	202	152
Metallurgical/materials	168	145	168	138	151	116	198	193	212	253	237	280
Mining	3	2	11	8	1	0	0	9	6	10	10	18
Nuclear	16	17	22	8	9	12	19	22	13	11	23	21
Petroleum	2	5	5	2	0	3	5	1	9	8	7	10
Engineering, n.e.c.	21	41	30	30	16	35	27	25	34	34	42	63
Total, health fields	1,073	1,097	1,359	1,273	1,318	1,475	1,665	1,868	2,251	2,394	2,826	3,371
Dentistry	27	9	42	51	65	55	60	33	28	23	29	42
Neurology	62	60	74	64	86	104	107	137	179	193	201	262
Nursing	0	0	0	0	0	0	1	0	1	0	1	1
Pharmaceutical sciences	125	171	150	151	114	144	170	186	239	259	274	258
Prev. med./cmty. health	24	27	32	22	24	39	37	62	47	46	72	74
Speech pathology/audiology	1	1	3	2	2	1	2	5	2	4	7	9
Veterinary sciences	6	10	9	8	5	10	18	32	32	34	32	42
Clinical medicine, n.e.c.	802	779	1,015	958	998	1,097	1,248	1,386	1,699	1,798	2,157	2,619
Health related, n.e.c.	26	40	34	17	24	25	22	27	24	37	53	64

See explanatory notes, if any, and SOURCE(S) at end of table.

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Table A-24. Total and non-U.S. citizen science and engineering postdoctoral appointees in doctorate-granting institutions, and percent non-U.S. citizens, by field: 1980-91

Page 3 of 3

Field	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Non-U.S. as percent of total ...	33.5	35.3	37.1	37.4	36.3	37.1	39.6	40.8	43.2	44.8	46.7	48.2
Total, S&E fields	36.8	38.6	40.2	40.6	39.6	40.2	42.5	43.5	45.1	46.9	48.7	50.5
Sciences, total	34.7	36.3	38.1	38.7	37.8	38.3	40.4	41.5	43.4	45.2	47.0	48.7
Physical sciences	50.0	50.6	52.8	55.3	53.7	55.0	55.4	54.5	56.1	56.5	57.7	60.2
Astronomy	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Chemistry	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Physics	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Physical sciences, n.e.c.	0.0	26.7	0.0	0.0	30.0	38.1	16.7	15.6	14.7	21.2	20.7	20.0
Earth, atmos., & oc. sci.	34.9	33.1	37.2	36.1	38.3	33.6	33.3	33.8	38.6	37.7	39.2	35.8
Atmospheric sciences	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Geosciences	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Oceanography	24.1	22.8	28.4	23.1	25.8	19.9	19.0	31.6	30.9	29.3	31.8	25.3
Earth, atmospheric, & ocean sciences, n.e.c.	0.0	14.3	30.8	22.2	41.2	23.1	22.7	34.5	35.7	39.4	50.0	38.1
Mathematical sciences	49.4	56.8	54.0	64.9	52.9	49.3	50.4	50.2	48.2	47.5	57.8	60.9
Computer sciences	34.2	30.2	47.1	26.1	54.9	33.3	39.2	39.2	35.0	42.9	46.2	43.7
Agricultural sciences	34.4	38.9	39.8	41.6	27.5	28.5	39.8	42.0	38.9	35.1	40.3	38.1
Biological sciences	27.7	29.5	30.9	30.9	30.7	32.1	34.9	37.1	39.6	42.6	44.3	46.0
Anatomy	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Biochemistry	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Biology	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Biometry/epidemiology ...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Biophysics	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Botany	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Cell biology	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Ecology	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Entomology/parasitology .	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Genetics	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Microbiology	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Nutrition	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Pathology	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Pharmacology	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Physiology	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Zoology	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Biosciences, n.e.c.	37.9	40.0	25.0	26.9	40.3	40.3	47.8	38.7	48.0	51.9	61.5	56.7
Psychology	7.5	6.3	11.5	12.5	14.0	10.9	10.8	9.6	15.9	14.7	19.1	17.5
Social sciences	25.3	33.1	37.0	35.3	32.9	29.8	35.2	36.7	22.8	24.3	30.7	41.9
Agricultural economics ..	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Anthropology	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Economics (except agric.)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Geography	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Hist. & phil. of science	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Linguistics	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Political science	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Sociology	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Sociology/anthropology ..	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	ERR	[illegible]
Social sciences, n.e.c. .	3.3	39.3	53.8	40.0	48.0	35.1	31.7	48.3	12.9	13.2	19.0	37.0
Engineering, total	61.2	69.1	68.2	67.2	62.8	63.6	67.3	67.2	65.6	65.3	65.7	68.8
Aerospace	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Agricultural	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Biomedical	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Chemical	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Civil	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Electrical	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Engineering science	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Industrial	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Mechanical	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Metallurgical/materials ..	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Mining	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Nuclear	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Petroleum	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Engineering, n.e.c.	41.2	70.7	63.8	66.7	55.2	59.3	57.4	71.4	77.3	72.3	72.4	75.9
Total, health fields	23.7	24.9	27.9	27.1	26.2	27.7	30.6	32.3	37.6	38.0	40.6	42.0
Dentistry	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Neurology	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Nursing	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Pharmaceutical sciences	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Prev. med./cmty. health	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Speech pathology/audiology .	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Veterinary sciences	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Clinical medicine, n.e.c. ..	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Health related, n.e.c.	27.4	39.2	30.1	18.5	20.7	25.0	22.0	26.7	26.1	35.2	42.4	41.6

NOTE: n.e.c. = not elsewhere classified

SOURCE: National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

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Table A-25. Total and non-U.S. citizen science and engineering postdoctoral appointees in doctorate-granting institutions, and percent non-U.S. citizens, by geographic distribution: 1980-91

Page 1 of 3

Division and State	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Total	18,086	18,411	19,646	19,362	20,727	21,535	22,423	23,781	24,929	26,165	28,107	30,432
New England	2,583	2,615	2,950	2,906	3,202	3,527	3,491	3,741	3,860	3,870	4,088	4,659
Connecticut	543	701	699	694	743	816	814	802	837	853	878	988
Maine	9	8	1	7	9	12	15	18	18	18	16	12
Massachusetts	1,857	1,695	2,048	2,056	2,293	2,523	2,466	2,691	2,769	2,762	2,938	3,380
New Hampshire	34	46	38	35	49	42	43	49	66	48	58	73
Rhode Island	85	108	95	64	57	82	100	123	111	129	121	128
Vermont	55	57	69	50	51	52	53	58	59	60	77	78
Middle Atlantic	3,406	3,401	3,464	3,345	3,557	3,579	3,725	3,917	3,923	4,224	4,497	4,704
New Jersey	312	305	307	334	353	341	398	448	502	519	576	597
New York	2,274	2,325	2,310	2,201	2,209	2,249	2,339	2,369	2,243	2,445	2,579	2,692
Pennsylvania	820	771	847	810	995	989	988	1,100	1,178	1,260	1,342	1,415
East North Central	2,461	2,531	2,721	2,665	2,693	2,837	2,940	3,166	3,242	3,419	3,859	4,127
Illinois	794	768	882	837	862	916	914	1,005	1,043	1,100	1,150	1,186
Indiana	330	340	347	352	295	436	505	422	421	419	519	600
Michigan	370	449	472	561	505	507	479	571	630	681	811	832
Ohio	493	498	514	508	585	508	530	622	657	708	835	935
Wisconsin	474	476	506	407	446	470	512	546	491	511	544	574
West North Central	1,241	1,294	1,340	1,313	1,316	1,310	1,365	1,411	1,542	1,652	1,754	1,779
Iowa	261	270	248	252	266	253	255	283	305	317	362	364
Kansas	159	157	163	165	165	123	167	191	200	224	207	219
Minnesota	309	324	350	360	363	365	390	386	427	426	474	492
Missouri	424	445	459	445	438	459	467	445	487	560	583	560
Nebraska	70	70	85	63	57	86	66	78	91	93	98	109
North Dakota	17	25	32	25	20	20	18	21	26	26	23	23
South Dakota	1	3	3	3	7	4	2	7	6	6	7	12
South Atlantic	2,045	2,175	2,268	2,350	2,429	2,597	2,849	2,963	3,154	3,365	3,601	3,738
Delaware	48	37	9	12	30	31	32	37	14	39	41	58
District of Columbia	107	126	145	101	114	95	124	137	134	136	117	111
Florida	247	236	283	296	313	342	364	387	416	420	528	600
Georgia	183	170	227	281	253	258	278	285	301	310	362	393
Maryland	502	546	605	641	653	755	806	872	974	910	971	957
North Carolina	576	615	560	547	608	655	709	707	771	901	988	947
South Carolina	95	92	82	106	93	87	92	105	102	89	79	133
Virginia	253	319	323	330	333	336	406	388	395	465	455	488
West Virginia	34	34	34	36	32	38	38	45	47	50	60	51
East South Central	679	590	621	570	571	605	656	786	882	930	996	978
Alabama	219	203	164	163	155	170	200	245	248	267	299	299
Kentucky	90	85	99	116	148	154	159	173	166	182	174	153
Mississippi	57	21	35	40	39	41	44	48	58	68	73	88
Tennessee	313	281	323	251	229	240	253	320	410	413	450	438
West South Central	1,308	1,207	1,378	1,452	1,527	1,622	1,662	1,776	1,970	2,097	2,076	2,256
Arkansas	15	10	22	21	26	30	29	29	42	46	32	32
Louisiana	142	155	114	100	173	170	161	181	226	218	234	241
Oklahoma	76	94	88	113	121	129	133	114	126	94	115	132
Texas	1,075	948	1,154	1,218	1,207	1,293	1,339	1,452	1,576	1,739	1,695	1,851
Mountain	731	822	969	897	988	972	1,059	1,107	1,061	1,114	1,314	1,330
Arizona	202	213	294	240	275	295	283	310	303	300	323	331
Colorado	285	348	382	372	386	350	445	474	386	411	496	506
Idaho	12	26	13	18	17	10	24	23	22	24	27	22
Montana	38	52	22	29	34	23	17	19	52	58	57	37
Nevada	14	19	16	32	22	18	21	32	53	45	35	66
New Mexico	46	25	33	26	41	55	47	61	27	32	98	98
Utah	125	139	198	166	201	200	214	177	200	219	248	245
Wyoming	9	0	11	14	12	21	8	11	18	25	30	25
Pacific	3,618	3,760	3,922	3,853	4,433	4,476	4,695	4,910	5,266	5,491	5,915	6,853
Alaska	3	2	5	3	3	18	7	1	0	6	6	7
California	2,990	3,166	3,262	3,176	3,684	3,702	3,894	4,096	4,389	4,589	5,017	5,683
Hawaii	76	52	33	38	30	39	23	31	39	27	43	68
Oregon	148	126	152	128	173	172	178	168	196	205	177	193
Washington	401	414	470	508	543	545	593	614	642	664	672	902
Outlying areas	14	16	13	11	11	10	1	4	29	3	7	8

See explanatory notes, if any, and SOURCE(S) at end of table.

Table A-25. Total and non-U.S. citizen science and engineering postdoctoral appointees in doctorate-granting institutions, and percent non-U.S. citizens, by geographic distribution: 1980-91

Page 2 of 3

Division and State	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Non-U.S. citizens	6,054	6,506	7,297	7,234	7,528	7,988	8,883	9,700	10,771	11,719	13,126	14,678
New England	778	816	985	976	1,011	1,111	1,206	1,407	1,491	1,556	1,787	2,161
Connecticut	159	188	242	232	224	229	220	272	282	321	367	457
Maine	2	2	0	4	1	1	3	4	3	2	5	2
Massachusetts	572	572	666	690	737	813	900	1,030	1,105	1,131	1,297	1,568
New Hampshire	5	6	6	2	11	8	10	14	25	20	20	30
Rhode Island	33	37	48	38	25	40	51	68	56	54	63	70
Vermont	7	11	23	10	13	20	22	19	20	28	35	34
Middle Atlantic	1,171	1,189	1,367	1,269	1,331	1,457	1,573	1,732	1,801	1,983	2,285	2,469
New Jersey	126	93	142	141	135	141	156	184	215	224	281	317
New York	756	786	857	824	820	940	1,004	1,072	1,031	1,150	1,304	1,447
Pennsylvania	289	310	368	304	376	376	413	476	555	609	700	705
East North Central	983	1,056	1,179	1,120	1,119	1,078	1,330	1,388	1,518	1,728	1,834	2,064
Illinois	314	338	418	382	393	311	472	460	498	582	556	577
Indiana	155	171	180	186	188	203	233	196	211	215	329	338
Michigan	128	178	187	194	190	202	217	270	290	313	386	617
Ohio	208	202	206	192	172	183	258	323	354	423	331	285
Wisconsin	178	167	188	166	176	179	150	139	165	195	232	247
West North Central	331	443	451	444	421	444	519	556	655	739	829	778
Iowa	40	89	69	62	60	68	86	100	120	130	128	115
Kansas	35	70	67	84	62	92	84	109	107	134	120	157
Minnesota	96	115	143	136	125	126	157	146	193	212	219	216
Missouri	129	132	127	122	135	120	147	164	171	201	247	183
Nebraska	26	30	32	27	31	29	35	25	53	50	94	94
North Dakota	5	7	12	12	6	8	9	11	9	11	10	10
South Dakota	0	0	1	1	2	1	1	1	2	1	4	3
South Atlantic	619	743	838	925	855	942	1,044	1,118	1,288	1,390	1,620	1,709
Delaware	22	21	8	7	16	16	18	20	9	22	23	36
District of Columbia	56	52	65	60	53	50	63	83	79	65	65	79
Florida	93	115	126	127	135	157	196	205	250	265	318	336
Georgia	79	72	109	161	118	131	130	150	170	175	213	224
Maryland	160	211	244	278	239	259	233	254	283	305	347	364
North Carolina	112	135	135	109	167	165	198	202	252	297	370	361
South Carolina	15	35	32	47	23	40	44	49	53	43	36	77
Virginia	69	81	101	110	92	110	135	129	157	195	213	198
West Virginia	13	21	18	26	12	14	27	26	35	23	35	34
East South Central	227	233	235	247	239	259	317	385	433	506	528	598
Alabama	71	70	59	64	66	74	90	112	117	145	149	177
Kentucky	44	27	39	59	62	69	87	96	110	113	107	102
Mississippi	12	13	19	19	18	23	23	28	30	48	48	66
Tennessee	100	123	118	105	93	93	117	149	176	200	224	253
West South Central	498	496	575	578	635	763	801	915	990	1,138	1,201	1,377
Arkansas	5	1	6	6	8	10	7	14	14	25	19	17
Louisiana	57	55	42	40	58	70	79	84	108	101	117	119
Oklahoma	33	47	36	54	63	68	56	51	73	52	77	87
Texas	403	393	491	478	506	615	659	766	795	960	988	1,154
Mountain	219	281	327	326	343	374	401	383	434	464	501	571
Arizona	65	82	96	96	88	133	124	92	121	139	153	153
Colorado	69	92	108	115	109	95	120	130	107	118	130	168
Idaho	2	9	8	9	6	3	6	11	14	15	16	24
Montana	3	5	8	6	13	13	10	5	8	12	15	14
Nevada	5	6	7	4	8	7	11	16	20	21	14	25
New Mexico	16	22	19	15	14	16	15	19	48	31	31	46
Utah	58	65	75	75	100	101	115	106	106	112	124	126
Wyoming	1	0	6	6	5	6	0	4	10	16	18	15
Pacific	1,224	1,245	1,334	1,347	1,572	1,556	1,691	1,812	2,156	2,214	2,536	2,944
Alaska	1	0	1	1	1	2	2	1	0	1	2	1
California	1,108	1,127	1,172	1,178	1,375	1,370	1,465	1,585	1,886	1,938	2,245	2,544
Hawaii	16	11	7	9	9	18	16	19	22	11	20	40
Oregon	23	28	42	42	51	49	57	55	76	76	59	69
Washington	76	79	112	117	136	117	151	152	172	188	210	290
Outlying areas	4	4	6	2	2	4	1	4	5	3	5	7

See explanatory notes, if any, and SOURCE(S) at end of table.

Table A-25. Total and non-U.S. citizen science and engineering postdoctoral appointees in doctorate-granting institutions, and percent non-U.S. citizens, by geographic distribution: 1980-91

Page 3 of 3

Division and State	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Percent non-U.S. citizens	33.5	35.3	37.1	37.4	36.3	37.1	39.6	40.8	43.2	44.8	46.7	48.2
New England	30.1	31.2	33.4	33.6	31.6	31.5	34.5	37.6	38.6	40.2	43.7	46.4
Connecticut	28.7	26.8	34.6	33.2	30.1	28.1	50.0	33.2	33.7	37.6	41.8	46.3
Maine	22.2	50.0	0.0	57.1	11.1	8.3	20.0	22.2	16.7	11.1	31.3	12.3
Massachusetts	30.8	33.7	32.5	33.6	32.1	32.2	39.3	38.3	38.9	40.9	44.1	49.2
New Hampshire	17.6	10.6	15.8	11.3	35.2	36.6	23.3	28.6	37.9	21.7	32.5	22.3
Rhode Island	38.8	29.6	50.5	56.3	43.9	48.8	51.0	55.3	50.5	21.9	52.1	52.7
Vermont	12.7	19.3	33.3	20.0	25.5	38.5	41.5	32.8	33.9	46.7	45.5	43.6
Middle Atlantic	34.4	35.0	39.5	37.9	37.4	40.7	42.2	44.2	45.9	46.9	50.8	52.5
New Jersey	30.2	30.5	27.3	22.2	36.3	21.3	36.5	21.1	23.8	25.2	28.8	53.1
New York	33.3	33.8	39.1	35.2	39.1	41.8	42.6	45.3	49.0	47.0	50.6	53.8
Pennsylvania	35.2	40.2	43.4	37.5	37.8	38.0	41.8	43.3	47.1	48.3	52.2	49.8
East North Central	39.9	41.7	43.3	42.0	41.6	38.0	45.2	43.8	46.8	50.5	47.5	50.0
Illinois	39.5	44.0	47.1	25.9	25.5	33.8	51.6	25.8	27.7	53.1	26.3	28.5
Indiana	27.0	50.3	22.7	20.3	22.7	26.3	26.1	29.0	50.1	51.3	28.0	56.1
Michigan	34.6	38.7	22.6	22.1	38.5	20.2	25.3	27.3	49.0	46.0	25.1	50.7
Ohio	23.5	30.9	26.1	38.6	35.5	36.0	48.7	50.2	53.9	58.5	21.6	52.4
Wisconsin	37.6	35.1	37.2	40.8	39.5	38.1	29.3	25.5	33.6	38.2	42.6	43.0
West North Central	26.7	34.2	33.7	33.8	32.0	33.9	38.6	39.4	42.5	44.7	47.3	43.7
Iowa	15.3	33.0	27.6	24.8	22.6	26.8	33.7	35.3	36.3	41.0	20.9	31.6
Kansas	22.0	22.6	21.9	50.9	37.9	23.2	50.3	52.1	53.5	59.8	29.6	71.7
Minnesota	31.1	35.5	30.8	32.8	34.3	37.2	40.3	37.8	25.5	22.5	25.9	43.9
Missouri	30.4	20.7	32.9	22.6	30.8	30.5	33.3	32.4	35.1	37.5	22.2	38.0
Nebraska	37.1	22.6	22.7	22.9	32.2	23.9	50.7	52.7	58.2	53.8	23.8	58.7
North Dakota	26.2	28.0	35.6	28.0	30.0	40.0	50.0	52.4	32.9	42.3	23.1	32.5
South Dakota	0.0	0.0	33.3	33.3	28.6	25.0	25.0	14.3	33.3	16.7	57.1	25.0
South Atlantic	30.3	34.2	36.9	39.4	35.2	36.3	36.6	37.7	40.8	41.3	45.0	45.7
Delaware	25.8	56.8	66.7	58.3	53.3	51.9	52.8	54.1	63.3	56.3	56.1	62.1
District of Columbia	36.4	21.3	22.8	50.4	29.5	52.6	50.8	60.6	57.0	59.0	55.9	71.6
Florida	39.3	28.3	22.5	22.9	43.1	26.9	28.9	53.0	60.5	57.0	60.5	59.0
Georgia	23.2	29.2	28.0	57.3	46.9	50.8	52.7	36.9	38.1	38.9	38.8	57.0
Maryland	31.6	38.6	20.3	43.2	39.9	34.3	56.0	56.9	56.7	33.2	35.7	38.0
North Carolina	19.4	22.0	24.1	19.9	22.5	25.2	52.6	28.9	36.7	33.0	37.2	38.1
South Carolina	36.8	30.1	21.5	22.3	39.2	40.0	27.9	39.7	36.0	28.3	25.6	57.9
Virginia	26.1	25.4	31.3	33.3	35.6	32.8	33.3	33.2	36.5	22.8	26.8	20.6
West Virginia	38.2	61.8	52.9	72.2	37.5	36.8	71.1	57.8	74.5	46.0	58.3	66.7
East South Central	33.4	39.5	37.8	43.3	41.9	42.8	48.3	49.0	49.1	54.2	53.0	61.1
Alabama	32.2	34.5	36.0	30.3	22.6	23.5	25.0	22.7	27.2	55.3	29.8	59.2
Kentucky	28.9	21.5	39.2	50.9	21.8	22.8	55.6	25.5	66.3	62.1	61.5	66.7
Mississippi	21.1	31.7	54.3	27.5	28.2	56.1	28.0	58.3	21.7	62.9	65.8	75.0
Tennessee	31.9	43.8	36.5	21.8	40.6	38.8	46.2	46.6	42.9	48.2	49.8	57.8
West South Central	38.1	41.1	41.7	39.8	41.6	47.0	48.2	51.5	50.3	54.3	57.9	61.0
Arkansas	33.3	10.0	35.0	28.0	27.9	33.3	28.5	48.3	33.3	52.3	56.2	51.1
Louisiana	20.7	35.5	32.8	20.0	53.5	21.5	28.1	26.5	27.8	26.3	50.0	29.4
Oklahoma	23.4	50.0	21.9	29.8	25.7	22.7	25.1	22.7	57.9	55.3	62.0	65.9
Texas	37.5	41.5	42.5	39.2	41.9	47.6	49.2	52.8	50.4	55.2	58.3	62.3
Mountain	30.0	34.2	33.7	36.3	34.7	38.5	37.9	34.6	40.9	41.7	38.1	42.9
Arizona	32.3	38.5	32.6	40.0	33.0	35.1	33.8	30.3	40.5	26.3	22.2	36.5
Colorado	32.5	38.7	28.3	30.9	28.5	37.1	37.0	27.2	29.7	28.7	26.5	39.5
Idaho	33.3	59.1	61.5	50.0	35.5	30.0	55.0	27.8	63.6	62.5	58.3	54.5
Montana	7.9	20.8	39.2	23.1	38.2	36.8	58.8	26.3	33.3	25.0	21.3	37.8
Nevada	35.7	29.9	43.8	33.3	36.2	38.9	51.5	63.9	22.1	63.9	38.5	56.0
New Mexico	30.4	22.3	36.5	30.9	36.1	30.5	31.7	37.3	37.3	51.1	30.0	20.9
Utah	29.4	46.8	32.9	25.9	29.8	20.5	53.7	53.8	51.5	52.1	50.0	31.6
Wyoming	11.1	0.0	54.5	42.9	41.7	28.6	0.0	36.4	55.6	64.0	60.0	60.0
Pacific	33.8	33.1	34.0	35.0	35.5	34.8	36.0	36.9	40.9	40.3	42.9	43.0
Alaska	33.3	0.0	33.3	33.3	33.3	11.1	37.1	100.0	0.0	0.0	0.0	0.0
California	37.1	35.9	35.6	34.1	37.3	37.0	36.8	38.7	43.0	42.5	44.7	44.8
Hawaii	21.1	31.2	21.5	32.7	30.0	28.5	60.9	91.5	50.4	40.7	49.5	38.8
Oregon	15.5	52.6	22.3	55.6	29.5	38.5	32.0	32.7	38.8	32.1	39.3	32.9
Washington	19.0	19.1	23.8	23.0	25.0	21.5	25.5	24.8	26.8	28.3	31.3	32.2
Outlying areas	28.6	25.0	46.2	18.2	18.2	40.0	100.0	100.0	17.2	100.0	71.4	87.5

SOURCE: National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering.

Table A-26. Total and non-U.S. citizen postdoctoral appointees in U.S. doctorate-granting institutions, and percent non-U.S. citizens, by area, ranked by total non-U.S. citizen postdoctoral appointees: 1991

Page 4 of 5

Institution and rank	All postdoctoral appointees				Non-U.S. citizens				Percent non-U.S. citizens			
	All surveyed fields	Sciences	Engineering	Health fields	All surveyed fields	Sciences	Engineering	Health fields	All surveyed fields	Sciences	Engineering	Health fields
Total, all institutions	30,432	20,444	1,953	8,035	14,678	9,963	1,344	3,371	48.2	48.7	68.8	42.0
1 Harvard University	2,295	1,111	22	1,162	1,065	500	8	557	46.4	45.0	36.4	47.9
2 Univ of Calif San Francisco	981	416	0	565	402	192	0	210	41.0	46.2	0.0	37.2
3 Yale University	856	492	35	329	396	235	25	136	46.3	47.8	71.4	41.3
4 Univ of Calif at Berkeley	973	897	40	36	378	341	31	6	38.8	38.0	77.5	16.7
5 Stanford University	764	482	39	243	324	216	21	87	42.4	44.8	53.8	35.8
6 Johns Hopkins University	716	331	20	365	303	137	15	151	42.3	41.4	75.0	41.4
7 Univ of Calif at Los Angeles	665	413	23	229	302	198	22	82	45.4	47.9	95.7	35.8
8 Univ of Calif at San Diego	715	337	31	347	288	147	20	121	40.3	43.6	64.5	34.9
9 Univ of Southern California	377	222	36	119	262	117	29	116	69.5	52.7	80.6	97.5
10 University of Pennsylvania	602	293	25	284	257	133	23	101	42.7	45.4	92.0	35.6
Total, 1st 10 institutions	8,944	4,994	271	3,679	3,977	2,216	194	1,567	44.5	44.4	71.6	42.6
11 University of Washington	815	413	28	374	252	159	17	76	30.9	38.5	60.7	20.3
12 Cornell University	445	299	36	110	237	143	25	69	53.3	47.8	69.4	62.7
13 University of Michigan	477	230	36	211	227	101	32	94	47.6	43.9	88.9	44.5
14 Columbia Univ Main Division	427	290	34	103	215	163	15	37	50.4	56.2	44.1	35.9
15 SUNY - Buffalo	311	195	42	74	175	127	12	36	56.3	65.1	28.6	48.6
16 Univ of Wisconsin - Madison	447	271	35	141	174	86	25	63	38.9	31.7	71.4	44.7
17 University of Florida	311	233	27	51	172	115	19	38	55.3	49.4	70.4	74.5
18 Univ of Texas at Austin	286	236	24	26	171	145	20	6	59.8	61.4	83.3	23.1
19 Massachusetts Inst of Tech	406	340	66	0	170	129	41	0	41.9	37.9	62.1	0.0
20 University of Chicago	431	295	0	136	168	107	0	61	39.0	36.3	0.0	44.9
Total, 1st 20 institutions	13,300	7,796	599	4,905	5,938	3,491	400	2,047	44.6	44.8	66.8	41.7
21 Case Western Reserve Univ	306	144	45	117	165	91	33	41	53.9	63.2	73.3	35.0
22 Univ of Houston-Univ Park	161	115	22	24	157	115	22	20	97.5	100.0	100.0	83.3
23 Purdue University	217	160	29	28	156	115	21	20	71.9	71.9	72.4	71.4
24 California Inst of Tech	331	292	39	0	153	135	18	0	46.2	46.2	46.2	0.0
25 University of Minnesota	373	293	35	45	152	102	21	29	40.8	34.8	60.0	64.4
26 Indiana University	325	196	3	126	143	105	2	36	44.0	53.6	66.7	28.6
27 Ohio State University	266	214	13	39	140	111	10	19	52.6	51.9	76.9	48.7
28 Texas A & M University	205	165	37	3	137	102	33	2	66.8	61.8	89.2	66.7
29 U of Tex SW Med Ctr Dallas	274	170	0	104	137	87	0	50	50.0	51.2	0.0	48.1
30 Washington University	404	239	1	164	135	95	1	39	33.4	39.7	100.0	23.8
Total, 1st 30 institutions	16,162	9,784	823	5,555	7,413	4,549	561	2,303	45.9	46.5	68.2	41.5
31 SUNY - Stony Brook	212	192	0	20	134	122	0	12	63.2	63.5	0.0	60.0
32 Univ of N Car at Greensboro	0	0	0	0	134	117	0	17	0.0	0.0	0.0	0.0
33 Yeshiva University	256	118	0	138	129	70	0	59	50.4	59.3	0.0	42.8
34 Northwestern University	233	200	22	11	127	104	19	4	54.5	52.0	86.4	36.4
35 Rockefeller University	237	237	0	0	125	125	0	0	52.7	52.7	0.0	0.0
36 University of Arizona	282	252	8	22	125	110	8	7	44.3	43.7	100.0	31.8
37 University of Calif at Davis	251	226	25	0	125	103	22	0	49.8	45.6	88.0	0.0
38 Baylor College of Medicine	217	175	0	42	122	102	0	20	56.2	58.3	0.0	47.6
39 Vanderbilt University	222	162	8	52	121	93	4	24	54.5	57.4	50.0	46.2
40 The U of Ala at Birmingham	210	122	1	87	118	74	1	43	56.2	60.7	100.0	49.4
Total, 1st 40 institutions	18,282	11,468	887	5,927	8,673	5,569	615	2,489	47.4	48.6	69.3	42.0
41 University of Rochester	226	170	8	48	117	98	2	17	51.8	57.6	25.0	35.4
42 Princeton University	274	242	32	0	115	92	23	0	42.0	38.0	71.9	0.0
43 University of Pittsburgh	211	137	16	58	115	94	10	11	54.5	68.6	62.5	19.0
44 University of Kansas	150	103	0	47	111	79	0	32	74.0	76.7	0.0	68.1
45 Michigan State University	207	186	17	4	109	92	15	2	52.7	49.5	88.2	50.0
46 Tufts University	221	95	11	115	108	47	9	52	48.9	49.5	81.8	45.2
47 Univ of Calif Santa Barbara	167	101	66	0	108	66	42	0	64.7	65.3	63.6	0.0
48 Duke University	335	181	10	144	106	61	5	40	31.6	33.7	50.0	27.8
49 U of Tex MD Anderson Cancer	152	88	0	64	105	57	0	48	69.1	64.8	0.0	75.0
50 Univ of Illinois at Urbana	241	198	33	10	101	74	26	1	41.9	37.4	78.8	10.0
Total, 1st 50 institutions	20,466	12,969	1,080	6,417	9,768	6,329	747	2,692	47.7	48.8	69.2	42.0

See explanatory notes, if any, and SOURCE(S) at end of table.

Table A-26. Total and non-U.S. citizen postdoctoral appointees in U.S. doctorate-granting institutions, and percent non-U.S. citizens, by area, ranked by total non-U.S. citizen postdoctoral appointees: 1991

Institution and rank	All postdoctoral appointees				Non-U.S. citizens				Percent non-U.S. citizens			
	All surveyed fields	Sciences	Engi- neering	Health fields	All surveyed fields	Sciences	Engi- neering	Health fields	All surveyed fields	Sciences	Engi- neering	Health fields
51 New York University	185	155	0	30	100	91	0	9	54.1	58.7	0.0	30.0
52 University of Virginia	273	193	12	68	100	80	5	15	36.6	41.5	41.7	22.1
53 University of Massachusetts	221	161	4	56	99	68	2	29	44.8	42.2	50.0	51.8
54 Rutgers the State University	170	132	27	11	98	72	19	7	57.6	54.5	70.4	63.6
55 Univ of Med and Dent of N J	146	100	0	46	97	66	0	31	66.4	66.0	0.0	67.4
56 Louisiana State Univ System	198	133	19	46	96	73	13	10	48.5	54.9	68.4	21.7
57 Univ of Illinois at Chicago	151	94	9	48	93	60	8	25	61.6	63.8	88.9	52.1
58 U of Tex Hlth Sci Ctr S Ant	177	87	0	90	89	49	0	40	50.3	56.3	0.0	44.4
59 Univ of Calif at Irvine	235	188	18	29	88	60	14	14	37.4	31.9	77.8	48.3
60 University of Utah	169	136	15	18	88	65	12	11	52.1	47.8	80.0	61.1
Total, 1st 60 institutions	22,391	14,348	1,184	6,859	10,716	7,013	820	2,883	47.9	48.9	69.3	42.0
61 N Car State Univ at Raleigh	168	95	60	13	85	39	42	4	50.6	41.1	70.0	30.8
62 U of Tennessee at Knoxville	136	111	8	17	81	71	7	3	59.6	64.0	87.5	17.6
63 University of Kentucky	123	84	21	18	81	48	19	14	65.9	57.1	90.5	77.8
64 Colorado State University	184	161	15	8	80	71	8	1	43.5	44.1	53.3	12.5
65 Wayne State University	144	85	7	52	78	43	6	29	54.2	50.6	85.7	55.8
66 University of Colorado	288	220	23	45	74	58	9	7	25.7	26.4	39.1	15.6
67 University of Iowa	282	101	13	168	74	46	4	24	26.2	45.5	30.8	14.3
68 University of Oklahoma	103	75	11	17	72	56	10	6	69.9	74.7	90.9	35.3
69 Univ of Tex Med Br Galveston	117	82	0	35	70	55	0	15	59.8	67.1	0.0	42.9
70 Univ of Calif at Riverside	131	131	0	0	68	68	0	0	51.9	51.9	0.0	0.0
Total, 1st 70 institutions	24,067	15,493	1,342	7,232	11,479	7,568	925	2,986	47.7	48.8	68.9	41.3
71 Pennsylvania State Univ	161	148	11	2	67	55	10	2	41.6	37.2	90.9	100.0
72 Emory University	114	114	0	0	66	66	0	0	57.9	57.9	0.0	0.0
73 Mayo Graduate School	119	54	0	65	64	23	0	41	53.8	42.6	0.0	63.1
74 Thomas Jefferson University	110	46	0	64	64	31	0	33	58.2	67.4	0.0	51.6
75 University of Georgia	139	124	0	15	63	52	0	11	45.3	41.9	0.0	73.3
76 Rice University	97	84	13	0	62	50	12	0	63.9	59.5	92.3	0.0
77 University of Cincinnati	148	117	12	19	61	41	9	11	41.2	35.0	75.0	57.9
78 Temple University	94	44	0	50	60	30	0	30	63.8	68.2	0.0	60.0
79 University of Connecticut	124	85	28	11	59	46	9	4	47.6	54.1	32.1	36.4
80 Florida State University	90	86	4	0	58	54	4	0	64.4	62.8	100.0	0.0
Total, 1st 80 institutions	25,263	16,395	1,410	7,458	12,103	8,016	969	3,118	47.9	48.9	68.7	41.8
81 Virginia Commonwealth Univ	141	72	0	69	56	30	0	26	39.7	41.7	0.0	37.7
82 Georgetown University	71	71	0	0	53	53	0	0	74.6	74.6	0.0	0.0
83 University of Miami	127	106	0	21	53	39	0	14	41.7	36.8	0.0	66.7
84 Brandeis University	92	92	0	0	50	50	0	0	54.3	54.3	0.0	0.0
85 Carnegie-Mellon University	89	50	39	0	50	25	25	0	56.2	50.0	64.1	0.0
86 Rensselaer Polytechnic Inst	69	34	35	0	49	26	23	0	71.0	76.5	65.7	0.0
87 Medical Coll of Wisconsin	83	32	0	51	48	19	0	29	57.8	59.4	0.0	56.9
88 Medical College of Georgia	51	50	0	1	47	47	0	0	92.2	94.0	0.0	0.0
89 Kansas State University	69	62	7	0	46	40	6	0	66.7	64.5	85.7	0.0
90 U of Maryland - Balt Prof Sc	75	63	0	12	44	42	0	2	58.7	66.7	0.0	16.7
Total, 1st 90 institutions	26,130	17,027	1,491	7,612	12,599	8,387	1,023	3,189	48.2	49.3	68.6	41.9
91 Brown University	95	87	8	0	42	35	7	0	44.2	40.2	87.5	0.0
92 Med Univ of South Carolina	65	28	0	37	42	12	0	30	64.6	42.9	0.0	81.1
93 Univ of Tennessee, Memphis	66	65	0	1	42	41	0	1	63.6	63.1	0.0	100.0
94 Iowa State U of Sci & Tech	81	71	10	0	41	33	8	0	50.6	46.5	80.0	0.0
95 University of South Florida	49	42	1	6	41	34	1	6	83.7	81.0	100.0	100.0
96 Univ of Hawaii at Manoa	68	62	6	0	40	34	6	0	58.8	54.8	100.0	0.0
97 University of Notre Dame	58	47	11	0	39	32	7	0	67.2	68.1	63.6	0.0
98 Washington State University	87	77	9	1	38	32	6	0	43.7	41.6	66.7	0.0
99 University of Delaware	58	47	11	0	36	27	9	0	62.1	57.4	81.8	0.0
100 University of Mississippi	53	48	1	4	36	32	0	4	67.9	66.7	0.0	100.0
Total, 1st 100 institutions	26,810	17,601	1,548	7,661	12,996	8,699	1,067	3,230	48.5	49.4	68.9	42.2

See explanatory notes, if any, and SOURCE(S) at end of table.

Table A-26. Total and non-U.S. citizen postdoctoral appointees in U.S. doctorate-granting institutions, and percent non-U.S. citizens, by area, ranked by total non-U.S. citizen postdoctoral appointees: 1991

Institution and rank	All postdoctoral appointees				Non-U.S. citizens				Percent non-U.S. citizens			
	All surveyed fields	Sciences	Engi-neering	Health fields	All surveyed fields	Sciences	Engi-neering	Health fields	All surveyed fields	Sciences	Engi-neering	Health fields
101 Virginia Poly Inst & State U	63	33	30	0	36	12	24	0	57.1	36.4	80.0	0.0
102 Lehigh University	46	33	13	0	35	24	11	0	76.1	72.7	84.6	0.0
103 Oregon State University	73	62	5	6	34	26	5	3	46.6	41.9	100.0	50.0
104 Syracuse University	58	45	12	1	34	26	8	0	58.6	57.8	66.7	0.0
105 Univ of Nebraska - Lincoln	60	53	4	3	34	27	4	3	56.7	50.9	100.0	100.0
106 U of Vermont & St Agric Coll	78	62	0	16	34	30	0	4	43.6	48.4	0.0	25.0
107 West Virginia University	50	42	7	1	34	27	7	0	68.0	64.3	100.0	0.0
108 CUNY Grad Sch and Univ Ctr	46	45	0	1	32	31	0	1	69.6	68.9	0.0	100.0
109 University of Akron	57	30	27	0	32	5	27	0	56.1	16.7	100.0	0.0
110 Univ of Texas at Arlington	38	27	11	0	30	19	11	0	78.9	70.4	100.0	0.0
Total, 1st 110 institutions	27,379	18,033	1,657	7,689	13,331	8,926	1,164	3,241	48.7	49.5	70.2	42.2
111 University of New Mexico	74	69	4	1	30	25	4	1	40.5	36.2	100.0	100.0
112 Dartmouth College	62	50	4	8	29	20	3	6	46.8	40.0	75.0	75.0
113 Georgia Inst of Technology	47	20	27	0	29	14	15	0	61.7	70.0	55.6	0.0
114 St. Louis University	41	38	0	3	29	26	0	3	70.7	68.4	0.0	100.0
115 Arizona State University	47	13	33	1	28	5	22	1	59.6	38.5	66.7	100.0
116 Brigham Young University	45	38	7	0	28	25	3	0	62.2	65.8	42.9	0.0
117 Texas Tech University	43	40	3	0	28	26	2	0	65.1	65.0	66.7	0.0
118 University of Rhode Island	33	25	1	7	28	20	1	7	84.8	80.0	100.0	100.0
119 Univ of Missouri - Columbia	81	67	7	7	27	20	7	0	33.3	29.9	100.0	0.0
120 Univ of Nebraska Medical Ctr	43	18	0	25	27	13	0	14	62.8	72.2	0.0	56.0
Total, 1st 120 institutions	27,895	18,411	1,743	7,741	13,614	9,120	1,221	3,273	48.8	49.5	70.1	42.3
121 Wake Forest University	67	39	0	28	27	16	0	11	40.3	41.0	0.0	39.3
122 Med Coll of Ohio at Toledo	43	12	0	31	26	8	0	18	60.5	66.7	0.0	58.1
123 University of South Carolina	50	48	0	2	26	25	0	1	52.0	52.1	0.0	50.0
124 University of Toledo	33	22	1	10	26	15	1	10	78.8	68.2	100.0	100.0
125 Clarkson University	42	29	13	0	25	15	10	0	59.5	51.7	76.9	0.0
126 University of Nevada at Reno	44	41	3	0	25	22	3	0	56.8	53.7	100.0	0.0
127 University of Idaho	44	39	5	0	24	20	4	0	54.5	51.3	80.0	0.0
128 SUNY - Hlth Sci Ctr B'klyn	48	36	0	12	23	21	0	2	47.9	58.3	0.0	16.7
129 The University of Alabama	30	28	2	0	23	21	2	0	76.7	75.0	100.0	0.0
130 Drexel University	27	13	14	0	22	11	11	0	81.5	84.6	78.6	0.0
Total, 1st 130 institutions	28,323	18,718	1,781	7,824	13,861	9,294	1,252	3,315	48.9	49.7	70.3	42.4
131 Mississippi State University	24	12	12	0	22	11	11	0	91.7	91.7	91.7	0.0
132 Southern Ill Univ Carbondale	35	28	7	0	21	15	6	0	60.0	53.6	85.7	0.0
133 University of Louisville	30	30	0	0	21	21	0	0	70.0	70.0	0.0	0.0
134 Northeastern University	33	31	0	2	19	19	0	0	57.6	61.3	0.0	0.0
135 Rush University	23	22	0	1	19	19	0	0	82.6	86.4	0.0	0.0
136 U of Wisconsin - Milwaukee	31	26	4	1	19	14	4	1	61.3	53.8	100.0	100.0
137 University of Oregon	78	78	0	0	19	19	0	0	24.4	24.4	0.0	0.0
138 Auburn University	31	20	11	0	18	11	7	0	58.1	55.0	63.6	0.0
139 Bowling Green State Univ	27	27	0	0	18	18	0	0	66.7	66.7	0.0	0.0
140 Loma Linda University	24	2	0	22	18	2	0	16	75.0	100.0	0.0	72.7
Total, 1st 140 institutions	28,659	18,994	1,815	7,850	14,055	9,443	1,280	3,332	49.0	49.7	70.5	42.4
141 Tulane Univ of Louisiana	31	30	1	0	18	18	0	0	58.1	60.0	0.0	0.0
142 New Mexico State University	24	23	1	0	16	15	1	0	66.7	65.2	100.0	0.0
143 Boston College	18	18	0	0	15	15	0	0	83.3	83.3	0.0	0.0
144 Georgia State University	25	25	0	0	15	15	0	0	60.0	60.0	0.0	0.0
145 New York Medical College	22	22	0	0	15	15	0	0	68.2	68.2	0.0	0.0
146 Oklahoma State University	29	27	2	0	15	14	1	0	51.7	51.9	50.0	0.0
147 The Med Coll of Pennsylvania	34	34	0	0	15	15	0	0	44.1	44.1	0.0	0.0
148 University of Wyoming	25	25	0	0	15	15	0	0	60.0	60.0	0.0	0.0
149 University of Denver	34	34	0	0	14	14	0	0	41.2	41.2	0.0	0.0
150 Illinois Inst of Technology	14	4	10	0	13	4	9	0	92.9	100.0	90.0	0.0
Total, 1st 150 institutions	28,915	19,236	1,829	7,850	14,206	9,583	1,291	3,332	49.1	49.8	70.6	42.4

See explanatory notes, if any, and SOURCE(S) at end of table.

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Table A-26. Total and non-U.S. citizen postdoctoral appointees in U.S. doctorate-granting institutions, and percent non-U.S. citizens, by area, ranked by total non-U.S. citizen postdoctoral appointees: 1991

Institution and rank	All postdoctoral appointees				Non-U.S. citizens				Percent non-U.S. citizens			
	All surveyed fields	Sciences	Engi-neering	Health fields	All surveyed fields	Sciences	Engi-neering	Health fields	All surveyed fields	Sciences	Engi-neering	Health fields
151 Polytechnic University	15	3	12	0	13	2	11	0	86.7	66.7	91.7	0.0
152 Univ of Missouri - Kansas C	16	15	0	1	13	13	0	0	81.3	86.7	0.0	0.0
153 University of South Alabama	20	20	0	0	13	13	0	0	65.0	65.0	0.0	0.0
154 Loyola University of Chicago	24	24	0	0	12	12	0	0	50.0	50.0	0.0	0.0
155 Montana State University	32	32	0	0	12	12	0	0	37.5	37.5	0.0	0.0
156 Southern Methodist Univ	16	16	0	0	12	12	0	0	75.0	75.0	0.0	0.0
157 University of Arkansas	24	17	7	0	12	7	5	0	50.0	41.2	71.4	0.0
158 Oregon Health Sciences Univ	32	27	0	5	11	8	0	3	34.4	29.6	0.0	60.0
159 SUNY - Hlth Sci Ctr Syracuse	16	16	0	0	11	11	0	0	68.8	68.8	0.0	0.0
160 Univ of Hlth Sci (Chicago)	19	19	0	0	11	11	0	0	57.9	57.9	0.0	0.0
Total, 1st 160 institutions	29,129	19,425	1,848	7,856	14,326	9,684	1,307	3,335	49.2	49.9	70.7	42.5
161 Baylor University	12	12	0	0	10	10	0	0	83.3	83.3	0.0	0.0
162 Catholic Univ of America	17	17	0	0	10	10	0	0	58.8	58.8	0.0	0.0
163 Hahnemann University	22	10	0	12	10	5	0	5	45.5	50.0	0.0	41.7
164 Northern Illinois University	21	21	0	0	10	10	0	0	47.6	47.6	0.0	0.0
165 Univ of Calif at Santa Cruz	45	45	0	0	10	10	0	0	22.2	22.2	0.0	0.0
166 Utah State University	31	30	1	0	10	9	1	0	32.3	30.0	100.0	0.0
167 Clark University	10	10	0	0	9	9	0	0	90.0	90.0	0.0	0.0
168 Clemson University	18	18	0	0	9	9	0	0	50.0	50.0	0.0	0.0
169 East Carolina University	16	16	0	0	9	9	0	0	56.3	56.3	0.0	0.0
170 Howard University	12	2	0	10	9	2	0	7	75.0	100.0	0.0	70.0
Total, 1st 170 institutions	29,333	19,606	1,849	7,878	14,422	9,767	1,308	3,347	49.2	49.8	70.7	42.5
171 North Dakota State Univ	18	18	0	0	9	9	0	0	50.0	50.0	0.0	0.0
172 Phila College of Osteo Med	14	0	0	14	9	0	0	9	64.3	0.0	0.0	64.3
173 San Diego State University	11	5	6	0	9	4	5	0	81.8	80.0	83.3	0.0
174 U of Maryland - Balto Cnty	14	14	0	0	9	9	0	0	64.3	64.3	0.0	0.0
175 Worcester Polytechnic Inst	13	2	11	0	9	2	7	0	69.2	100.0	63.6	0.0
176 Boston University	36	28	8	0	8	8	0	0	22.2	28.6	0.0	0.0
177 SUNY - Coll of Env Sci & For	16	11	5	0	8	4	4	0	50.0	36.4	80.0	0.0
178 Uniformed Serv U of Hlth Sci	15	12	0	3	8	5	0	3	53.3	41.7	0.0	100.0
179 Univ of Missouri - St Louis	11	11	0	0	8	8	0	0	72.7	72.7	0.0	0.0
180 Univ of Southern Mississippi	11	11	0	0	8	8	0	0	72.7	72.7	0.0	0.0
Total, 1st 180 institutions	29,492	19,718	1,879	7,895	14,507	9,824	1,324	3,359	49.2	49.8	70.5	42.5
181 University of Lowell	10	10	0	0	8	8	0	0	80.0	80.0	0.0	0.0
182 Florida Inst of Technology	14	14	0	0	7	7	0	0	50.0	50.0	0.0	0.0
183 George Washington University	11	4	5	2	7	2	5	0	63.6	50.0	100.0	0.0
184 Stevens Inst of Technology	7	5	2	0	7	5	2	0	100.0	100.0	100.0	0.0
185 Univ of Pto Rico - Rio Piedr	7	7	0	0	7	7	0	0	100.0	100.0	0.0	0.0
186 University of North Texas	12	12	0	0	7	7	0	0	58.3	58.3	0.0	0.0
187 Woods Hole Oceanog Inst	24	21	3	0	7	5	2	0	29.2	23.8	66.7	0.0
188 Marquette University	13	10	3	0	6	6	0	0	46.2	60.0	0.0	0.0
189 Texas College of Osteo Med	18	0	0	18	6	0	0	6	33.3	0.0	0.0	33.3
190 US Naval Postgraduate School	10	7	3	0	6	5	1	0	60.0	71.4	33.3	0.0
Total, 1st 190 institutions	29,618	19,808	1,895	7,915	14,575	9,876	1,334	3,365	49.2	49.9	70.4	42.5
191 Wright State University	8	6	2	0	6	4	2	0	75.0	66.7	100.0	0.0
192 College of William and Mary	10	10	0	0	5	5	0	0	50.0	50.0	0.0	0.0
193 Lamar University	5	5	0	0	5	5	0	0	100.0	100.0	0.0	0.0
194 Meharry Medical College	5	5	0	0	5	5	0	0	100.0	100.0	0.0	0.0
195 Ohio University	7	6	1	0	5	4	1	0	71.4	66.7	100.0	0.0
196 Oregon Grad Inst of Sci & Te	10	10	0	0	5	5	0	0	50.0	50.0	0.0	0.0
197 The U of Ala in Huntsville	8	5	3	0	5	3	2	0	62.5	60.0	66.7	0.0
198 U of Arkansas - Med Sci Camp	8	8	0	0	5	5	0	0	62.5	62.5	0.0	0.0
199 Memphis State University	9	9	0	0	4	4	0	0	44.4	44.4	0.0	0.0
200 Miami University	19	19	0	0	4	4	0	0	21.1	21.1	0.0	0.0
Total, 1st 200 institutions	29,707	19,891	1,901	7,915	14,624	9,920	1,339	3,365	49.2	49.9	70.4	42.5

See explanatory notes, if any, and SOURCE(S) at end of table.

Table A-26. Total and non-U.S. citizen postdoctoral appointees in U.S. doctorate-granting institutions, and percent non-U.S. citizens, by area, ranked by total non-U.S. citizen postdoctoral appointees: 1991

Page 5 of 5

Institution and rank	All postdoctoral appointees				Non-U.S. citizens				Percent non-U.S. citizens			
	All surveyed fields	Sciences	Engi-neering	Health fields	All surveyed fields	Sciences	Engi-neering	Health fields	All surveyed fields	Sciences	Engi-neering	Health fields
201 Texas Christian University	7	7	0	0	4	4	0	0	57.1	57.1	0.0	0.0
202 Clark Atlanta University	3	3	0	0	3	3	0	0	100.0	100.0	0.0	0.0
203 Creighton University	6	6	0	0	3	3	0	0	50.0	50.0	0.0	0.0
204 South Dakota State Univ	5	5	0	0	3	3	0	0	60.0	60.0	0.0	0.0
205 Xavier University	7	0	0	7	3	0	0	3	42.9	0.0	0.0	42.9
206 Central Michigan University	2	2	0	0	2	2	0	0	100.0	100.0	0.0	0.0
207 Florida A & M University	2	0	0	2	2	0	0	2	100.0	0.0	0.0	100.0
208 Illinois State University	3	3	0	0	2	2	0	0	66.7	66.7	0.0	0.0
209 Santa Clara University	2	0	2	0	2	0	2	0	100.0	0.0	100.0	0.0
210 U of Southwestern Louisiana	5	5	0	0	2	2	0	0	40.0	40.0	0.0	0.0
Total, 1st 210 institutions	29,749	19,922	1,903	7,924	14,650	9,939	1,341	3,370	49.2	49.9	70.5	42.5
211 Univ of Texas at El Paso	5	5	0	0	2	2	0	0	40.0	40.0	0.0	0.0
212 Univ of Central Florida	3	3	0	0	2	2	0	0	66.7	66.7	0.0	0.0
213 University of Maine	14	7	7	0	2	2	0	0	14.3	28.6	0.0	0.0
214 University of Montana	5	5	0	0	2	2	0	0	40.0	40.0	0.0	0.0
215 Wesleyan University	8	8	0	0	2	2	0	0	25.0	25.0	0.0	0.0
216 Adelphi University	2	2	0	0	1	1	0	0	50.0	50.0	0.0	0.0
217 Albany Med Ctr Graduate Sch	12	12	0	0	1	1	0	0	8.3	8.3	0.0	0.0
218 Andrews University	1	1	0	0	1	1	0	0	100.0	100.0	0.0	0.0
219 Cleveland State University	9	0	9	0	1	0	1	0	11.1	0.0	11.1	0.0
220 CUNY City College	11	11	0	0	1	1	0	0	9.1	9.1	0.0	0.0
Total, 1st 220 institutions	29,819	19,976	1,919	7,924	14,665	9,953	1,342	3,370	49.2	49.8	69.9	42.5
221 CUNY Hunter College	3	2	0	1	1	1	0	0	33.3	50.0	0.0	0.0
222 Florida International Univ	4	0	4	0	1	0	1	0	25.0	0.0	25.0	0.0
223 Inst of Paper Science & Tech	1	0	1	0	1	0	1	0	100.0	0.0	100.0	0.0
224 Mass Coll of Pharm/Allied Hl	1	1	0	0	1	1	0	0	100.0	100.0	0.0	0.0
225 Old Dominion University	1	1	0	0	1	1	0	0	100.0	100.0	0.0	0.0
226 St John's University	3	3	0	0	1	1	0	0	33.3	33.3	0.0	0.0
227 Univ of Alaska at Fairbanks	7	7	0	0	1	1	0	0	14.3	14.3	0.0	0.0
228 Univ of Missouri - Rolla	5	4	1	0	1	1	0	0	20.0	25.0	0.0	0.0
229 University of Dayton	2	2	0	0	1	1	0	0	50.0	50.0	0.0	0.0
230 University of New Hampshire	9	8	1	0	1	1	0	0	11.1	12.5	0.0	0.0
Total, 1st 230 institutions	29,855	20,004	1,926	7,925	14,675	9,961	1,344	3,370	49.2	49.8	69.8	42.5
231 University of North Dakota	5	5	0	0	1	1	0	0	20.0	20.0	0.0	0.0
232 University of the Pacific	1	0	0	1	1	0	0	1	100.0	0.0	0.0	100.0
233 Villanova University	2	2	0	0	1	1	0	0	50.0	50.0	0.0	0.0
Total, 1st 233 institutions	29,863	20,011	1,926	7,926	14,678	9,963	1,344	3,371	49.2	49.8	69.8	42.5
All other institutions	569	433	27	109	0	0	0	0	0.0	0.0	0.0	0.0

NOTE: Includes medical schools.
SOURCE: National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

Table A-27. Employed doctoral scientists and engineers by citizenship status: selected years, 1973-89

Year	Total	Percent distribution					
		U.S. citizens			Non-U.S. citizens		
		Total	Native-born	Naturalized	Total	Perm. residents	Temporary visas
1973	220,332	93.9	--	--	5.8	--	--
1975	255,940	94.4	--	--	5.5	--	--
1977	285,055	94.0	--	--	5.9	--	--
1979	314,257	92.4	--	--	7.4	--	--
1981	343,956	93.8	84.8	9.0	6.1	4.6	1.0
1983	369,320	94.2	84.2	9.6	5.8	4.8	0.7
1985	400,358	93.8	83.6	10.2	6.1	4.9	1.1
1987	419,118	93.9	83.5	10.3	6.1	5.2	0.8
1989	448,643	93.7	83.0	10.7	6.3	5.0	1.2

NOTES: Data for U.S. citizens by birth, and for non-U.S. citizens by visa status, were not collected prior to 1981.
Detail may not add to totals because of rounding.
SOURCE: National Science Foundation/SRS, Survey of Doctorate Recipients

Table A-28. Employed doctoral scientists and engineers by field and citizenship: 1989
(in thousands)

Field	Total 1/	U.S.	Non-U.S.	Percent non-U.S.
Total, all fields	448,643	420,457	28,133	6.3
Total scientists	373,860	353,409	20,415	5.5
Physical scientists	70,209	64,802	5,407	7.7
Earth, atmospheric, and ocean scientists	19,787	18,426	1,361	6.9
Mathematical scientists	17,611	15,924	1,687	9.6
Computer specialists	19,797	18,045	1,752	8.8
Agricultural scientists	16,504	15,907	597	3.6
Biological scientists	67,250	63,818	3,432	5.1
Medical scientists	32,079	30,604	1,475	4.6
Psychologists	60,596	59,630	938	1.5
Social scientists	70,027	66,253	3,766	5.4
Total engineers	74,783	67,048	7,718	10.3
Aeronautical/astronautical ...	6,367	5,933	434	6.8
Chemical	7,959	7,151	808	10.2
Civil	6,951	6,184	767	11.0
Electrical/electronics	15,088	13,103	1,968	13.0
Materials	8,280	7,206	1,074	13.0
Mechanical	7,390	6,672	718	9.7
Nuclear	2,437	2,201	236	9.7
Systems design	3,896	3,618	278	7.1
Other	16,415	14,980	1,435	8.7

1/ Includes individuals for whom citizenship was unknown.
SOURCE: National Science Foundation/SRS, Survey of Doctorate Recipients

Appendix B

Technical Notes

This report presents statistics from several data sources. The following are the primary references used for major portions of the analysis:

Section	Source	Date range of statistics
1.	Annual Census of Foreign Students, Institute of International Education (IIE)	1954/55-1990/91
	Fall Enrollment and Compliance Report, Department of Education, National Center for Education Statistics (NCES)	1976-90
	Engineering and Technology Enrollments, American Association of Engineering Societies, Inc., Engineering Manpower Commission	Fall 1991
2.	Survey of Graduate Science and Engineering Students and Postdoctorates (GSESP), National Science Foundation (NSF), Division of Science Resources Studies (SRS)	Fall 1975-90
3.	Completions Survey, Department of Education, NCES	Academic years 1960-90
	Survey of Earned Doctorates, NSF/SRS	1960-90
4.	Survey of Research Participation and Characteristics of Science and Engineering Faculty, NSF/SRS	1985-86
	Survey of Graduate Science and Engineering Students and Postdoctorates (GSESP) NSF/SRS	Fall 1979-90
	Survey of Doctorate Recipients, NSF/SRS	Alternate years, 1973-89

For purposes of comparability, academic years are listed throughout this report according to the calendar year in which they end. Thus "1991" indicates graduate S&E enrollment data for fall 1990, earned doctorates for the academic year 1990/91, etc.

Essential features of the primary data sources are presented here; additional technical information on surveys conducted by the National Science Foundation (NSF) is available from the Division of Science Resources Studies, NSF. Other non-NSF sources should be consulted directly.

Annual census of foreign students

Annual surveys requesting information on foreign students are sent to all two- and four-year institutions with accreditation recognized by the Secretary of Education listed in the *Education Directory: Colleges and Universities* of the Department of Education. Numbers of institutions and response rates are summarized in table A-1. Response rates by type of institution and data elements are reviewed in the annual publication series, *Open Doors*, published by the Institute of International Education (IIE), 809 United Nations Plaza, New York, New York 10017.

Table B-1. Listing of States by regions according to UNESCO, IIE, and DRF

Country name		UNESCO grouping	IIE grouping	DRF grouping
1	Afghanistan	Asia	South & Ctrl. Asia	West Asia
2	Albania	Europe	East Europe	East Europe
3	Algeria	Africa	Northern Africa	West North Africa
4	American Samoa	Oceania	--	--
5	Andorra	Europe	West Europe	--
6	Angola	Africa	Central Africa	Southern Africa
7	Anguilla	North America	Caribbean	--
8	Antigua & Barbuda	North America	Caribbean	--
9	Argentina	South America	South America	South America
10	Aruba	--	Caribbean	--
11	Australia	Oceania	Oceania	Pacific
12	Austria	Europe	West Europe	Central Europe
13	Bahamas	North America	Caribbean	Cuba & Islands
14	Bahrain	Asia	Middle East	West Asia
15	Bangladesh	Asia	South & Ctrl. Asia	West Asia
16	Barbados	North America	Caribbean	Cuba & Islands
17	Belgium	Europe	West Europe	West Europe
18	Belize	North America	Central America	Central America
19	Benin	Africa	West Africa	West North Africa
20	Bermuda	North America	North America	Cuba & Islands
21	Bhutan	Asia	South & Ctrl. Asia	--
22	Bolivia	South America	South America	South America
23	Botswana	Africa	Southern Africa	Southern Africa
24	Brazil	South America	South America	South America
25	British Virgin Islands	North America	Caribbean	--
26	Brunei	Asia	Southeast Asia	Pacific
27	Bulgaria	Europe	East Europe	East Europe
28	Burkina Faso	Africa	West Africa	West North Africa
29	Burundi	Africa	East Africa	Southern Africa
30	Byelorussia	USSR	--	--
31	Cambodia	Asia	Southeast Asia	East Asia
32	Cameroon	Africa	Central Africa	West North Africa
33	Canada	North America	North America	Canada
34	Cape Verde	Africa	West Africa	--
35	Cayman Islands	North America	Caribbean	--
36	Central African Republic	Africa	Central Africa	East North Africa
37	Chad	Africa	Central Africa	East North Africa
38	Chile	South America	South America	South America
39	China, People's Republic	Asia	East Asia	East Asia
40	China, Republic of (Taiwan)	--	East Asia	East Asia
41	Colombia	South America	South America	South America
42	Comoros	Africa	East Africa	--
43	Congo	Africa	Central Africa	Southern Africa

Table B-1. Listing of States by regions according to UNESCO, IIE, and DRF

	Country name	UNESCO grouping	IIE grouping	DRF grouping
44	Cook Islands	Oceania	Oceania	–
45	Costa Rica	North America	Central America	Central America
46	Cuba	North America	Caribbean	Cuba & Islands
47	Cyprus	Asia	Middle East	West Asia
48	Czechoslovakia	Europe	East Europe	East Europe
49	Denmark	Europe	West Europe	North Europe
50	Djibouti	Africa	East Africa	East North Africa
51	Dominica	North America	Caribbean	–
52	Dominican Republic	North America	Caribbean	Cuba & Islands
53	East Timor	Asia	–	–
54	Ecuador	South America	South America	South America
55	Egypt	Africa	Northern Africa	East North Africa
56	England	–	–	North Europe
57	Equatorial Guinea	Africa	Central Africa	West North Africa
58	Ethiopia	Africa	East Africa	East North Africa
59	Faeroe Islands	Europe	–	–
60	Falkland Islands	South America	South America	–
61	Fiji	Oceania	Oceania	Pacific
62	Finland	Europe	West Europe	North Europe
63	France	Europe	West Europe	West Europe
64	French Guiana	South America	South America	–
65	French Polynesia	Oceania	Oceania	Pacific
66	Gabon	Africa	Central Africa	–
67	Gambia	Africa	West Africa	West North Africa
68	German Democratic Republic	Europe	East Europe	–
69	Germany, Federal Republic of	Europe	West Europe	Central Europe
70	Ghana	Africa	West Africa	West North Africa
71	Gibraltar	Europe	West Europe	–
72	Greece	Europe	West Europe	East Europe
73	Greenland	North America	–	–
74	Grenada	North America	Caribbean	–
75	Guadeloupe	North America	Caribbean	–
76	Guam	Oceania	–	–
77	Guatemala	North America	Central America	Central America
78	Guinea	Africa	West Africa	West North Africa
79	Guinea-Bissau	Africa	West Africa	–
80	Guyana	South America	South America	South America
81	Haiti	North America	Caribbean	Cuba & Islands
82	Honduras	North America	Central America	Central America
83	Hong Kong	Asia	East Asia	East Asia
84	Hungary	Europe	East Europe	East Europe
85	Iceland	Europe	West Europe	North Europe
86	India	Asia	South & Ctrl. Asia	West Asia
87	Indonesia	Asia	Southeast Asia	Pacific
88	Iran	Asia	Middle East	West Asia
89	Iraq	Asia	Middle East	West Asia
90	Ireland	Europe	West Europe	North Europe
91	Israel	Asia	Middle East	West Asia
92	Italy	Europe	West Europe	Central Europe
93	Ivory Coast	Africa	West Africa	West North Africa
94	Jamaica	North America	Caribbean	Cuba & Islands
95	Japan	Asia	East Asia	East Asia
96	Jordan	Asia	Middle East	West Asia
97	Jugoslavia	Europe	East Europe	East Europe
98	Kenya	Africa	East Africa	Southern Africa
99	Kiribati	Oceania	Oceania	–

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Table B-1. Listing of States by regions according to UNESCO, IIE, and DRF

	Country name	UNESCO grouping	IIE grouping	DRF grouping
100	Korea, Democratic People's Rep.	Asia	East Asia	--
101	Korea, Republic of	Asia	East Asia	East Asia
102	Kuwait	Asia	Middle East	West Asia
103	Lao People's Democratic Republic	Asia	Southeast Asia	East Asia
104	Lebanon	Asia	Middle East	West Asia
105	Lesotho	Africa	Southern Africa	Southern Africa
106	Liberia	Africa	West Africa	West North Africa
107	Libyan Arab Republic	Africa	Northern Africa	East North Africa
108	Liechtenstein	Europe	West Europe	Central Europe
109	Luxemburg	Europe	West Europe	West Europe
110	Macau	Asia	East Asia	East Asia
111	Madagascar	Africa	East Africa	Southern Africa
112	Malawi	Africa	East Africa	Southern Africa
113	Malaysia	Asia	Southeast Asia	East Asia
114	Maldives	Asia	South & Ctrl. Asia	West Asia
115	Mali	Africa	West Africa	West North Africa
116	Malta	Europe	West Europe	Central Europe
117	Marshall Islands	--	Oceania	--
118	Martinique	North America	Caribbean	Cuba & Islands
119	Mauritania	Africa	West Africa	West North Africa
120	Mauritius	Africa	East Africa	Southern Africa
121	Mexico	North America	Central America	Central America
122	Monaco	Europe	West Europe	--
123	Mongolia	Asia	East Asia	East Asia
124	Montserrat	North America	Caribbean	--
125	Morocco	Africa	Northern Africa	West North Africa
126	Mozambique	Africa	East Africa	Southern Africa
127	Myanmar	Asia	Southeast Asia	East Asia
128	Namibia	Africa	Southern Africa	Southern Africa
129	Nauru	Oceania	--	Pacific
130	Nepal	Asia	South & Ctrl. Asia	West Asia
131	Netherlands	Europe	West Europe	West Europe
132	Netherlands Antilles	North America	Caribbean	Cuba & Islands
133	New Caledonia	Oceania	Oceania	--
134	New Zealand	Oceania	Oceania	Pacific
135	Nicaragua	North America	Central America	Central America
136	Niger	Africa	West Africa	West North Africa
137	Nigeria	Africa	West Africa	West North Africa
138	Niue	Oceania	Oceania	--
139	Norfolk Island	Oceania	--	--
140	Norway	Europe	West Europe	North Europe
141	Oman	Asia	Middle East	West Asia
142	Pacific Islands Trust Terr'y	Oceania	Oceania	--
143	Pakistan	Asia	South & Ctrl. Asia	West Asia
144	Palau	--	Oceania	--
145	Palestine	--	--	West Asia
146	Panama	North America	Central America	Central America
147	Papua New Guinea	Oceania	Oceania	--
148	Paraguay	South America	South America	South America
149	Peru	South America	South America	South America
150	Philippines	Asia	Southeast Asia	Pacific
151	Poland	Europe	East Europe	East Europe
152	Portugal	Europe	West Europe	West Europe
153	Puerto Rico	North America	--	--
154	Qatar	Asia	Middle East	West Asia
155	Reunion	Africa	East Africa	--
156	Romania	Europe	East Europe	East Europe

Table B-1. Listing of States by regions according to UNESCO, IIE, and DRF

	Country name	UNESCO grouping	IIE grouping	DRF grouping
157	Rwanda	Africa	East Africa	Southern Africa
158	Saint Helena	Africa	West Africa	--
159	Saint Kitts & Nevis	North America	Caribbean	--
160	Saint Lucia	North America	Caribbean	--
161	Saint Pierre & Miquelon	North America	--	--
162	Saint Thomas & Prince	Africa	Central Africa	--
163	Saint Vincent & the Grenadines	North America	Caribbean	--
164	Salvador, El	North America	Central America	Central America
165	San Marino	Europe	West Europe	--
166	Saudi Arabia	Asia	Middle East	West Asia
167	Scotland	--	--	North Europe
168	Senegal	Africa	West Africa	West North Africa
169	Seychelles	Africa	East Africa	Southern Africa
170	Sierra Leone	Africa	West Africa	West North Africa
171	Sikkim	--	--	West Asia
172	Singapore	Asia	Southeast Asia	East Asia
173	Solomon Islands	Oceania	Oceania	--
174	Somalia	Africa	East Africa	East North Africa
175	South Africa	Africa	Southern Africa	Southern Africa
176	Spain	Europe	West Europe	West Europe
177	Sri Lanka	Asia	South & Ctrl. Asia	West Asia
178	Sudan	Africa	Northern Africa	East North Africa
179	Suriname	South America	South America	South America
180	Swaziland	Africa	Southern Africa	Southern Africa
181	Sweden	Europe	West Europe	North Europe
182	Switzerland	Europe	West Europe	West Europe
183	Syrian Arab Republic	Asia	Middle East	West Asia
184	Tanzania, United Republic of	Africa	East Africa	--
185	Thailand	Asia	Southeast Asia	East Asia
186	Togo	Africa	West Africa	West North Africa
187	Tokelau	Oceania	--	--
188	Tonga	Oceania	Oceania	Pacific
189	Trinidad & Tobago	North America	Caribbean	Cuba & Islands
190	Tunisia	Africa	Northern Africa	West North Africa
191	Turkey	Asia	Middle East	West Asia
192	Turks & Caicos Islands	North America	Caribbean	--
193	Tuvalu	Oceania	Oceania	--
194	Uganda	Africa	East Africa	Southern Africa
195	Ukraine	USSR	--	--
196	Union of Soviet Socialist Rep's	USSR	East Europe	East Europe
197	United Arab Emirates	Asia	Middle East	--
198	United Arab Republic	--	--	West Asia
199	United Kingdom	Europe	West Europe	--
200	United States	North America	--	--
201	Uruguay	South America	South America	South America
202	Vanuatu	Oceania	--	--
203	Vatican City	Europe	West Europe	--
204	Venezuela	South America	South America	South America
205	Viet Nam	Asia	Southeast Asia	East Asia
206	Vietnam, Democratic Republic	--	--	East Asia
207	Vietnam, Republic of	--	--	East Asia
208	Virgin Islands of the U.S.	North America	--	--
209	Wales	--	--	North Europe
210	Western Sahara	Africa	--	--
211	Western Samoa	Oceania	Oceania	Pacific
212	Yemen Arab Republic	Asia	Middle East	West Asia

Table B-1. Listing of States by regions according to UNESCO, IIE, and DRF

	Country name	UNESCO grouping	IIE grouping	DRF grouping
213	Yemen, People's Dem. Republic	Asia	Middle East	West Asia
214	Zaire	Africa	Central Africa	Southern Africa
215	Zambia	Africa	East Africa	Southern Africa
216	Zimbabwe	Africa	East Africa	Southern Africa
	Number of States covered	204	192	158

SOURCES: United Nations Educational, Social, and Cultural Organization Statistical Yearbooks; IIE, Open Doors, and National Science Foundation/SRS, Survey of Earned Doctorates.

Institutions are requested to report as a foreign student anyone who is enrolled for courses in the United States who is not a citizen and not an immigrant (permanent resident). Resident aliens, those holding "green cards," are not to be included in counts of foreign students. Countries included in IIE regions are shown in table B-1.

Engineering and technology enrollments and degrees

Detailed data on engineering specialties are derived from annual surveys conducted by the Engineering Manpower Commission of the American Association of Engineering Societies, Inc. The most recent surveys, presenting data for academic year 1990/91, included enrollment data from 328 institutions and degree data from 308 institutions.

Additional information and detailed data are available from the American Association of Engineering Societies, 1111 19th Street, N.W., Suite 608, Washington, D.C. 20036-3690.

Fall enrollment and completions surveys

Surveys of students enrolled and degrees awarded are part of the Integrated Postsecondary Education Data System (IPEDS) Survey sent to all two- and four-year institutions with regional accreditation by the National Center for Education Statistics (NCES), Department of Education. These surveys, and the preceding Higher Education General Information Survey (HEGIS) system, have requested citizenship status on a biennial basis since 1976.

Institutions are requested to report as nonresident aliens all persons who are not citizens of the United States and do not have the right to remain indefinitely. Resident aliens who are not citizens or nationals of the United States but have been lawfully admitted for permanent residence are to be reported together with U.S. citizens. This definition agrees with that used by the Institute of International Education, but differs from that used in the National Science Foundation's surveys. Additional information and detailed data are available from the Postsecondary Education Statistics Division, National Center for Education Statistics, U.S. Department of Education, 555 New Jersey Ave., N.W., Washington, D.C. 20208.

Survey of Graduate Students and Postdoctorates in Science and Engineering (GSESP)

Data from the fall 1987 Survey of Graduate Students and Postdoctorates in Science and Engineering (GSESP) represent graduate science and engineering (S&E) enrollment for the fall semester at all academic institutions in the United States which granted doctorate- or master's-level degrees in any S&E field. Institutions were requested to include data for all branch campuses, affiliated research centers, and separately organized components such as medical or dental schools, schools of nursing, public health, etc. The final 1990 survey universe consisted of 730 reporting units at 610 institutions. Of these, 454 reporting units were associated with 334 doctorate-granting institutions and 276 represented master's-granting institutions. Only 18 institutions were complete nonrespondents. At the department level, 9,937 departments, or 95 percent of the 10,483 departments surveyed, responded. This total includes 8,884 departments, or 85 percent of the total, providing complete responses, and 1,053 departments, or 10 percent, for which partial imputation was necessary. Imputation rates were slightly higher for non-U.S. citizens than for totals, both in graduate enrollment data and postdoctoral appointees (table B-2).

Table B-2. Imputation for nonresponse at doctorate-granting institutions by citizenship: 1991

Data item	Total	U. S. citizens	Non-U.S. citizens
Full-time graduate students	275,262	188,099	87,163
Number imputed	13,657	7,242	6,415
Percent imputed	5.0	3.9	7.4
Science and engineering postdoctoral appointees	30,432	15,754	14,678
Number imputed	2,108	817	1,291
Percent imputed	6.9	5.2	8.8

SOURCE: National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

Institutions are requested to count as a foreign student any individual who has not attained U.S. citizenship, whether a nonresident alien on a student or other temporary visa or holding a permanent visa or "green card"; applicants for U. S. citizenship are considered as foreign until the date their citizenship becomes effective.

Additional information and detailed data are available from the Science and Engineering Education and Human Resources Program, Division of Science Resources Studies, National Science Foundation, 1800 G Street, N. W., Room L-609, Washington, D.C. 20550.

Survey of Earned Doctorates

The Survey of Earned Doctorates has been conducted annually by the National Academy of Sciences for the NSF and other Federal agencies since 1957. Information from this survey becomes part of the Doctorate Records File, which includes about 916,000 records for doctorates awarded since 1920 by regionally accredited universities and colleges. These surveys include doctoral degrees such as the Ph.D. or Sc.D., but not first-professional degrees such as the J.D. or M.D. Approximately 95 percent of the annual cohort of doctorate recipients respond to the questionnaire distributed to individuals through the cooperation of the Graduate Deans. Partial data from public sources are added to the file for nonrespondents. The data for a given year include all doctorates awarded in the 12-month period ending on June 30 of that year.

Respondents who are non-U.S. citizens are asked to report visa status and country of citizenship. Persons on both permanent (immigrant) and temporary visas are included in the totals of foreign recipients. Countries included in regions for the Survey of Earned Doctorates are shown in table B-1.

The number of S&E doctor's degrees reported by the Survey of Earned Doctorates differs slightly from that reported by NCES in its annual survey of Earned Degrees Conferred because of the different sources of the data and because of differences in field classification systems. In addition, the NSF data on total degrees are restricted to research doctorates while those from NCES may include nonresearch doctorates. Because the NCES survey includes information on bachelor's, master's, and doctorate degrees, that source is appropriate for studying the relationships among degree fields at different levels. The Survey of Earned Doctorates is better suited for describing the characteristics of doctorate recipients. The differences between the two data series have been generally consistent over the 1960-90 period.

Additional information and detailed data are available from the Science and Engineering Education and Human Resources Program, Division of Science Resources Studies, National Science Foundation, 1800 G Street, N.W., Room L-609, Washington, D.C. 20550.

Survey of Research Participation and Characteristics of Science and Engineering Faculty

In 1986, NSF surveyed department heads in 21 selected science and engineering fields at doctorate-granting institutions. The survey population was 2,074 doctorate-granting departments in 156 institutions that had science or engineering doctorate programs in fall 1984 and received at least $2.15 million in Federal research and development funding in fiscal year 1983. Responses were received from 1,664 departments (80 percent of the total surveyed) at 154 institutions. The survey questionnaire contained two questions which related to foreign faculty:

1. Foreign faculty citizenship status--number of faculty members who were nonresident aliens on temporary visas and resident aliens on permanent visas; and

2. Faculty members who did not receive their bachelor's degrees in the United States, by academic rank.

Additional information and detailed data are available from the Science and Engineering Education and Human Resources Program, Division of Science Resources Studies, National Science Foundation, 1800 G Street, N.W., Room L-609, Washington, D.C. 20550.

Survey of Doctorate Recipients (SDR)

Data on the total number of doctorate-holders in the United States are collected in the Longitudinal Doctorate Project, which contains information on the supply and utilization of science and engineering doctoral personnel living in the United States. The survey has been conducted biennially since 1973 by the National Research Council for the National Science Foundation.

The target population for the 1989 SDR was those who had earned doctorates in science or engineering between January 1, 1946 and June 30, 1988. Individuals not in the U.S. at the time of the survey, and citizens of foreign countries who indicated at the time they received their degree that they had firm plans to leave the United States after obtaining the doctorate, were excluded from the survey. The survey was conducted on a sample basis, with 72,555 individuals selected from the sampling frame of 525,685, for a sampling rate of about 14 percent. The sample was stratified on the basis of source and type of degree, sex, field, year, racial/ethnic background, and citizenship, with sampling ratios ranging from 2 percent for the largest cells to 100 percent for the smallest cells. Of the 72,555 individuals in the sample, 70,395 were determined to be active scientists and engineers; of these, 38,799 responded for a response rate of 55 percent.

Additional information is available from the Science and Engineering Personnel Program, Division of Science Resources Studies, National Science Foundation, 1800 G Street, N.W., Room L-609, Washington, D.C. 20550.

SUPPLEMENTARY DATA TABLES

If you would like to receive more information on this subject, additional tables are available in a pamphlet entitled *Foreign Participation in U.S. Science and Engineering: Supplementary Data Tables.* To order a copy, please fill out the information below and return this sheet to:

J. G. Huckenpöhler
Science and Engineering Education and Human Resources Program
Division of Science Resources Studies
National Science Foundation
1800 G Street, N.W.
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